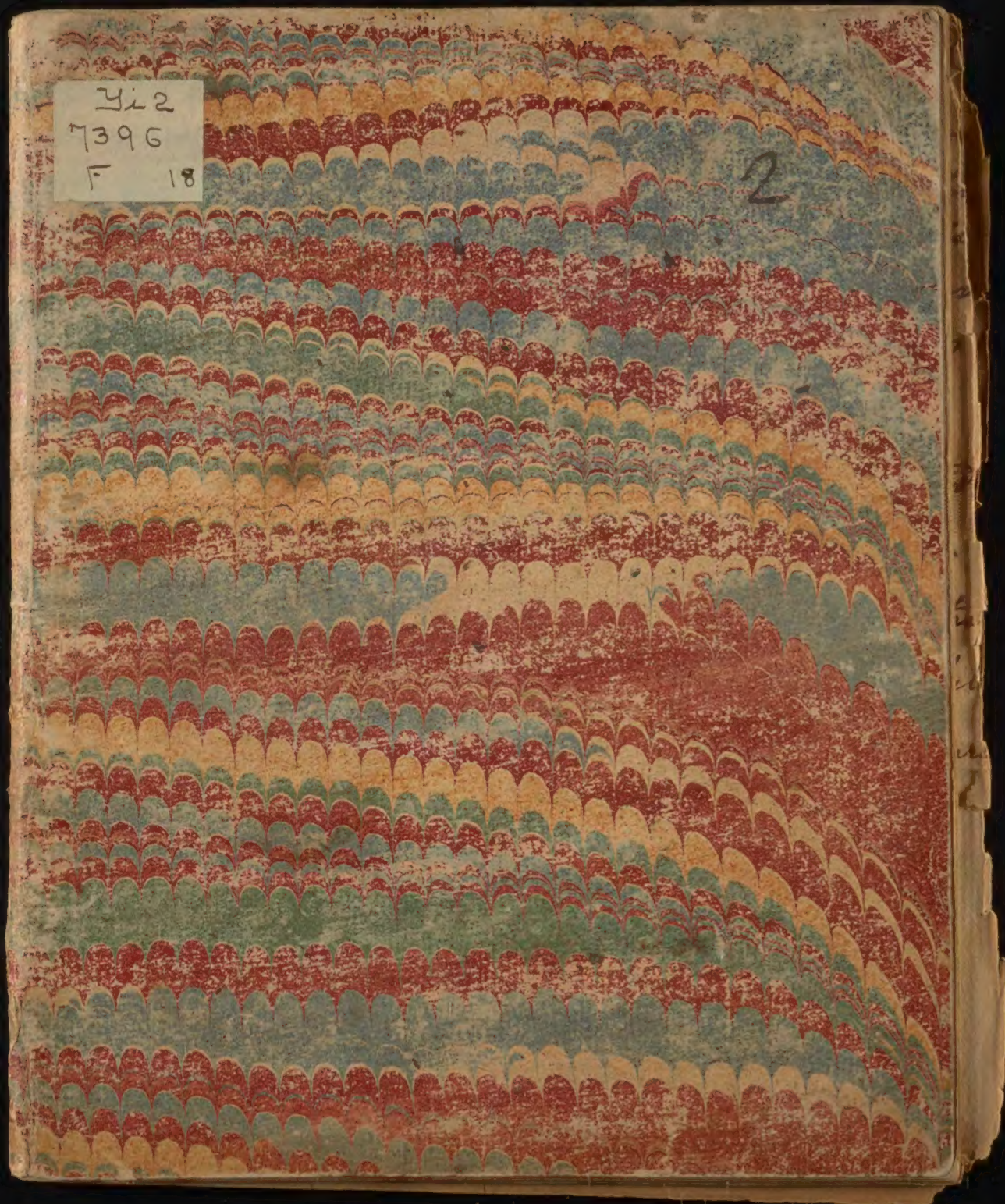
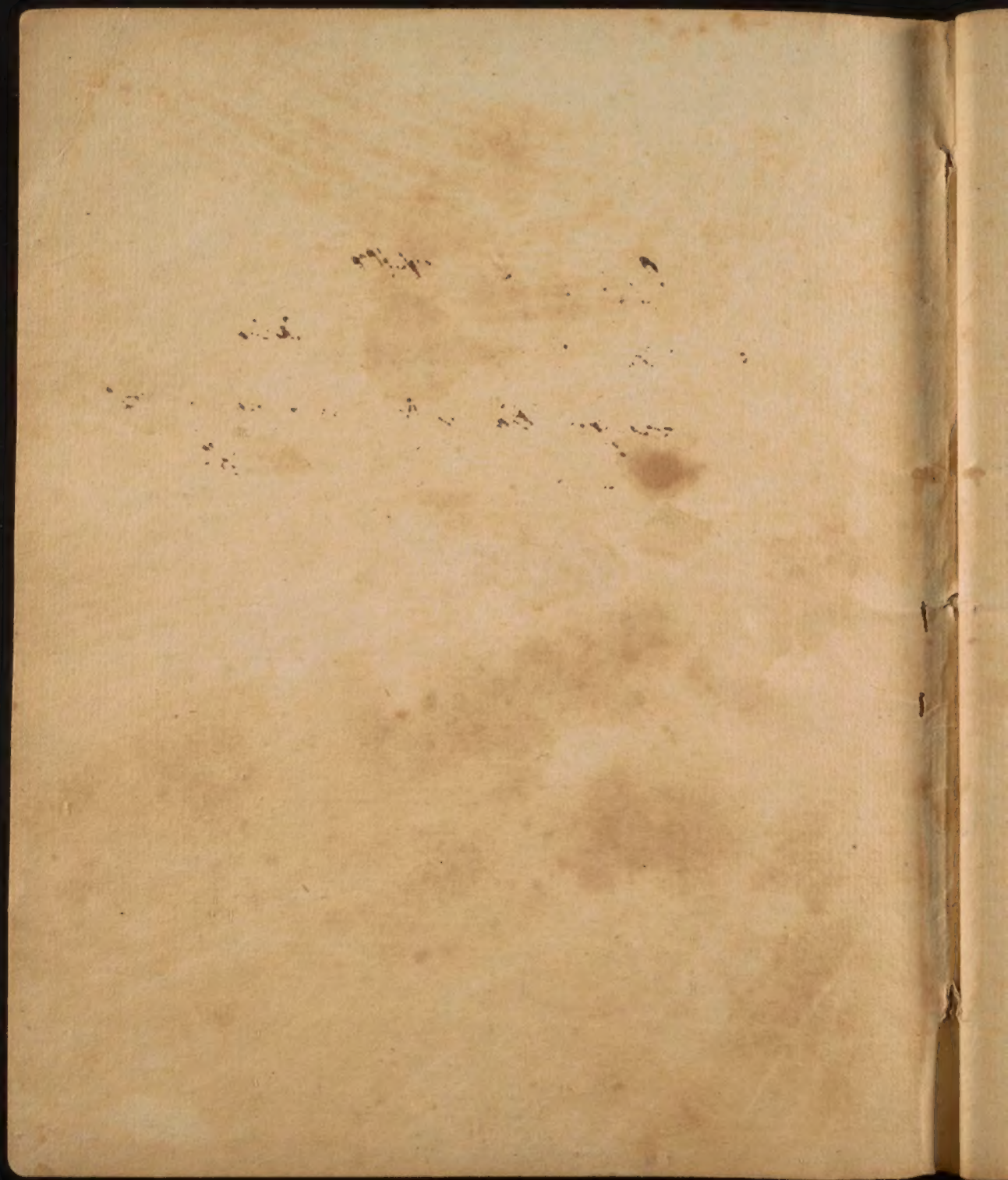


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Lectures on Pathology.
Morbid Effects of Cold. p: 47.
of Rarity & Density of the Air 80
of Impregnations & mixtures of
the Air — — 80

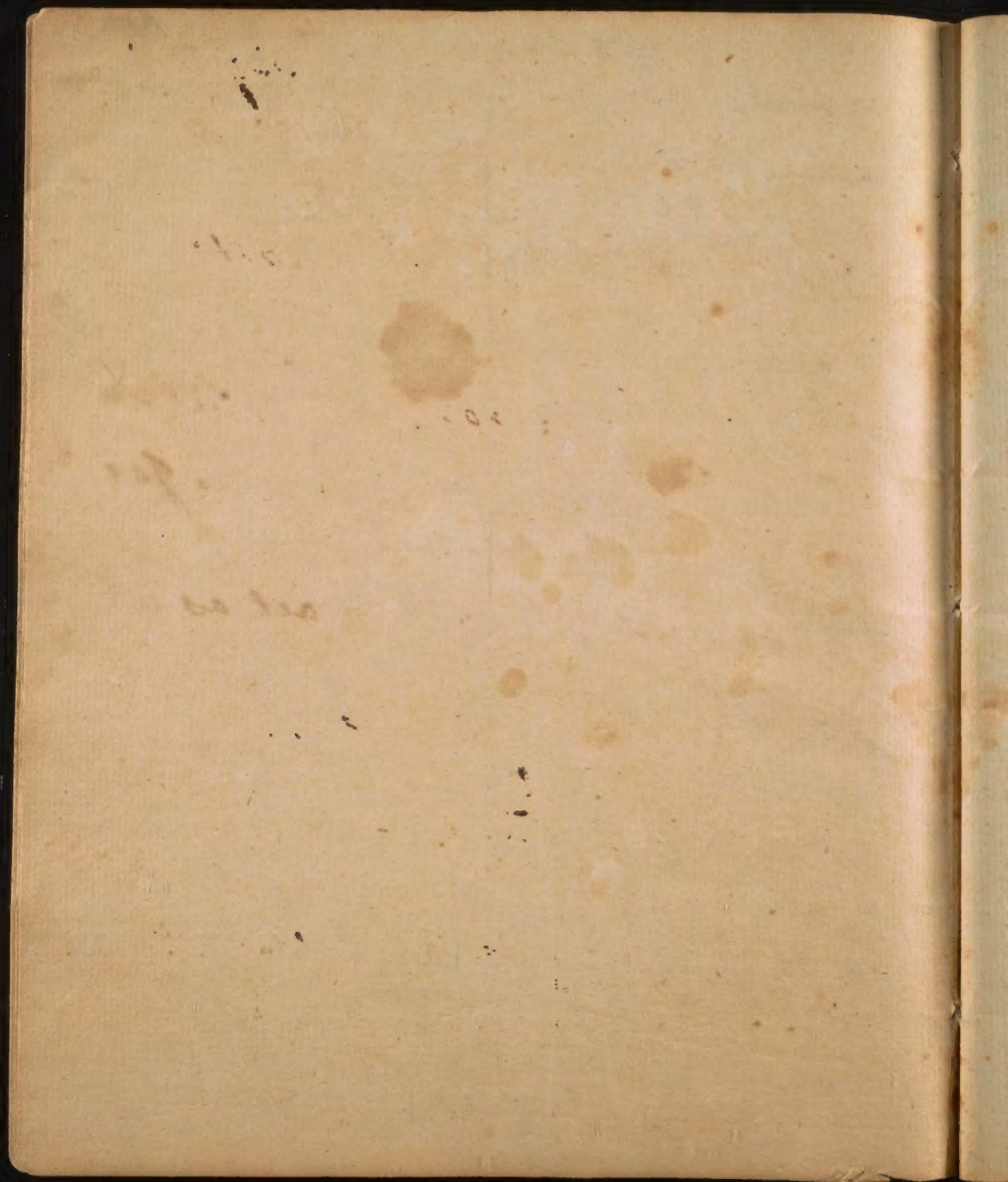
v I shall mention its positive, & 2^d its
relative effects. -

falls more ^{wholly} instantly
~~more~~ rain in those Islands in one
year than in any other of coun-
try in Europe - or perhaps in the
world. - tho' less than in the US -

Let us next attend to the effects
of Cold upon the human body. ✓

Cold is a negative quality. It exists
only from the abstraction of heat.

It has been supposed to act as a stimu-
lant upon the body, but this opinion
has arisen only from an ignorance of
that Law in the Animal Economy,
that the Abstraction of ^{the} Stimulus
of heat by
increasing the excitability of the
System renders it liable to be acted
upon with more force by other

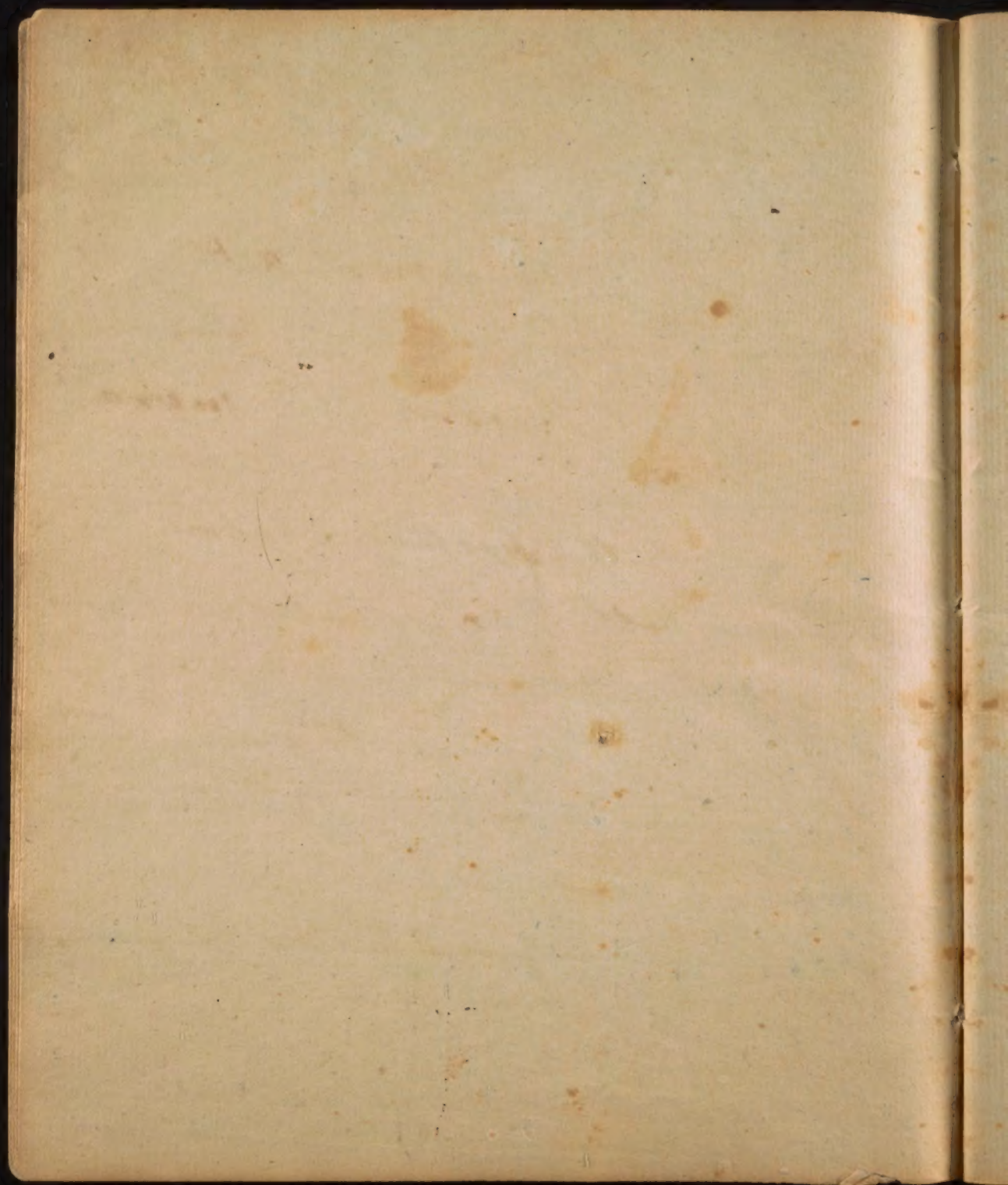


stimuli, and hence the vigor im-
 -parted to the system by these stimuli
 has been erroneously ascribed to
 the cold. The universal action of
 cold on the system is as a sedative.

This I infer ^{1st} from the general
 debility which follows the action
 of cold on the system. Labourers &
 travellers both bear witness to the truth
 of this observation in the winter season.
 2 from the weakness - ^{or} ~~or~~ ^{and}
 absence of pulse [&] from the ^{weakness -} sleeping -
 - see and death which follow cold.

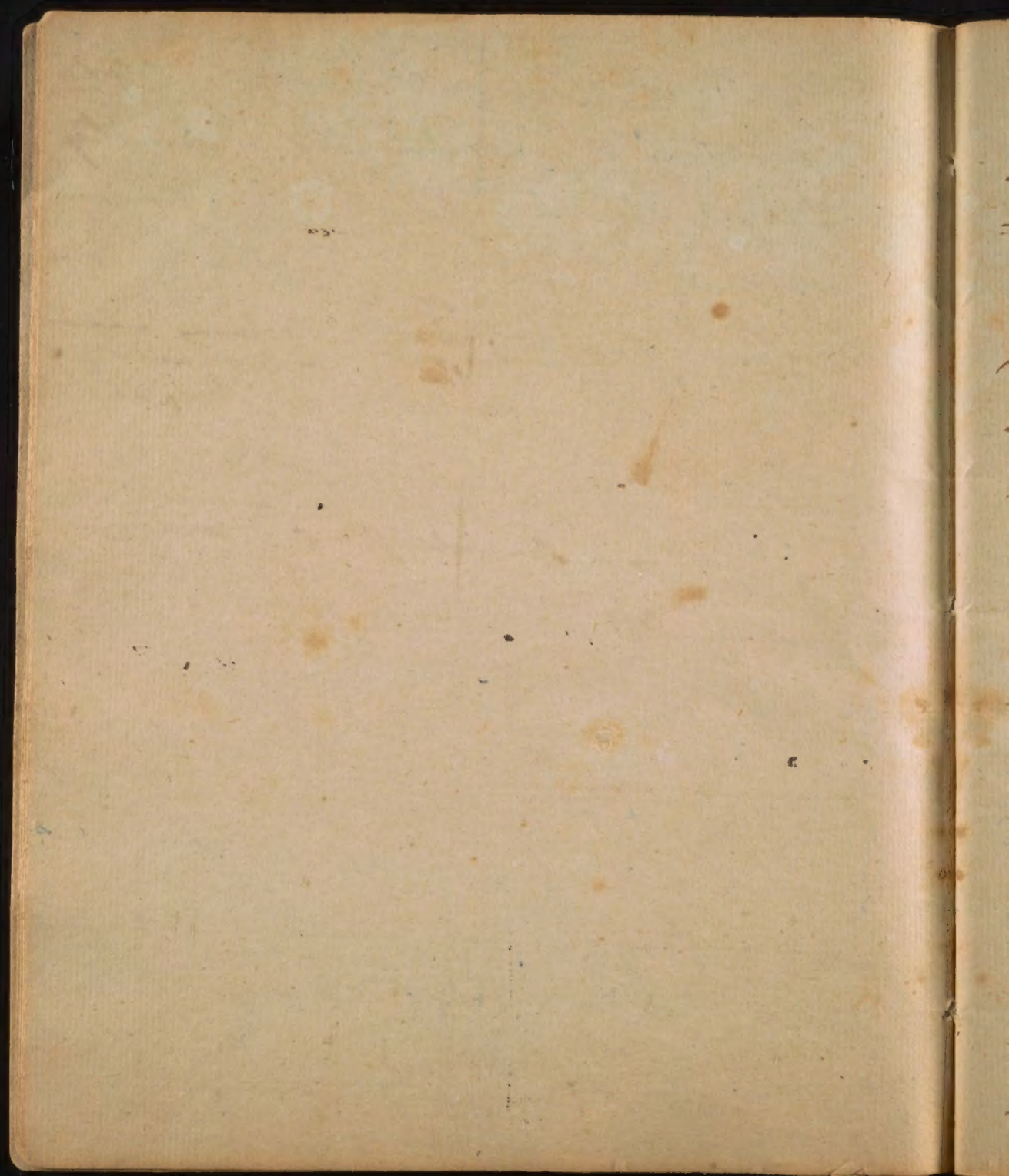
The pulse of a greenlander is generally
 beats but 40 strokes in a minute. all

these phenomena certainly indicate
 the sedative operation of cold upon



the system. & from the effects of cold
in certain diseases being so exactly
analogous to the effects of certain
ridative medicines such as bleeding -
purgings - and low diet. - ~~They all~~ ^{It}
acts by inducing ~~debility~~ ^{the} debility of Abstraction. This
has often been demonstrated in in-
flam^y fevers - small pox - ^{tonic} mania
& many other diseases of too much
action. -

I know it may be said here in
favor of the stimulating power of cold,
that when we feel much debilitated by
heat in summer, a sudden change
in the air to a cooler temperature
carries off that debility. Does not the
cool air here act by bracing the



body? - I answer - no, - to understand
 the meaning of this phenomenon, read
 - But what was said of the effects of heat.
 - It always produces ~~indirect debility~~ ^{when in excess depression}
 by its excess. Let us suppose healthy
 excitement to depend upon 75° of
 heat according to Fahrenheit's Scale. now
 supposing the F should rise to 95° or 100° ,
~~indirect debility~~ ^{depression} would immediately
 be brought on in this ^{State} of the System.
 let cool air be applied to the body suf-
 -ficient to abstract the 20 or 25°
 of ^{heat} which we have been added to the
 75° , the body will immediately re-
 -turn to its healthy point of excite-
 -ment, in consequence of which



Dyspepsion 41

the ~~indirect~~ ^{Dyspepsion} debility will be removed,
& the body will feel a sensation which
will have been mistaken for the bra-
cing effects of cold. The cool air only
relieves the system from its ^{Dyspepsion} indirect
induced by cause of Stimulus
~~debility~~ and restores to it ^{its} healthy
or tonic degree of heat. —

I beg of you Great. to attend to
this explanation of the supposed
bracing effects of cold, for it is a
key that unlocks the ^{arcana} ~~the~~ ^{phenomena in} ~~the~~ ^{errors} ~~of~~ many diseases, and relieves us
from many of the ~~obscurities~~ ^{errors} of Dr.
Brown's practice in certain diseases.

If the pulse low - and scarcely to be felt,
the beginning of ^{or yellow fever} ~~in a pleurisy~~ ^{This depends upon}
~~or dyspepsion~~ ^{or the pinpricks of cold}
~~indirect debility~~ ^{is induced by pain.}

31

^{raised}
 it ~~removed~~ by ^{stimulus} V.S. ? This depends
 upon those degrees of pain being Abstracted
 which produced the ^{Oppression} ~~indirect debility~~.
 - Is the system ^{uncommonly weak} so languid that in
 the beginning of a bilious fever, ~~that~~ This frequently
 depends on ^{Oppression} ~~indirect debility~~. - Is this
 weakness removed by an emetic ?
 This depends upon the Abstraction of
 the ~~stimulus~~ of the bile from the
 Stomach which produced the ^{Oppression} ~~indirect~~
~~debility~~. - I am disposed to suspect
^{sometimes} that the weak pulse which occurs
 in the beginning of Palsy & apoplexy,
 is frequently produced in like man-
 -ner by ^{great Oppression} ~~indirect debility~~, ^{hence} ~~that~~
 V.S. ^{is the} ~~even in such cases would be~~

✓ It affects the lungs breast which
very intense with great pain. This
was sensibly felt by the Americans
who went to measure a degree near the
North pole. -

^a most effectual remedies to remove
^{It acts} it by abstracting excess of stimulus;
~~than the usual stimulating remedies~~
~~which are prescribed in that state~~
~~of the system. I have heard of Dr. Williams~~
~~once saved a patient in apoplexy~~
~~who had this weak & slow pulse by~~
~~taking from him 100 of blood. The~~
~~in these cases~~
~~pulse sometimes descends to 40 strokes~~
~~in a minute, & is again so weak as~~
~~scarcely to be perceptible. —~~
~~I shall now proceed to mention~~
~~the ^{positive} effects of cold upon different parts~~
~~of the system.~~

1 On the Arterial system it produces
 debility and excitability. ^{while it} ~~It appears~~
~~I weaken the moving fibres,~~
~~increase to increase the~~ it seems
 to increase the cohesion of the simple
 fibres of the body. ~~It disposes to all~~
~~kind of fever, even Intermitting,~~

2
V This argument ^{be} to be true, should ~~be~~
reciprocal in its influence upon the master
as well as the slave, for the effects of cold
are the same upon the wills of each of them.

+ a stimulating power in cold, but this
is not the case. The pain is ~~the~~ effect of
the ~~as~~ reaction of the system to such a
degree as to produce morbid excitement in
the part affected. In some instances the heat
of the body ^{repels} ~~is attracted~~ to the cold part th;
so much force in order to equalize itself
that it becomes the cause of that morbid
excitement & pain. It even produces infl-
ammation in some cases. ~~By~~ By

2 It produces Languor & indispotion
to motion in the ~~muscles~~ organs of vo-
luntary motion, - hence some writers
have said that the inhabitants of
cold countries ~~that~~ like those of warm,
were made to be slaves. - having no
wills to ~~move~~ ^{stimulate} themselves to exercise, they
say that they should be stimulated
into action by the wills of ^{a master.} ~~the~~ people.

3 It ~~dulls sensation~~ ^{affects} the nervous
system, & when very intense, ^{with} ~~it produces~~
~~a~~ pain, in the ~~head~~ ^{whether excited, in the head or limbs} - Sleepiness &
death. - This Pain has been ascribed to +

4 It invigorates the appetite, especially
for animal food. Horses eat more
in cold than in warm weather. The
stimulus of blunnet serves to

the long application of cold, sensibility is
so far destroyed that wounds upon the
soles of the feet from broken glass ex-
cite no pain. This has been noticed
by Meade in his travels to the north
extremity of our country.

✓ Hence it is said to be stimulating - but
the stimulus is from other causes to
obviate its debility. It frequently
increases the secretion & flow of
urine - hence Dr. Denbarn's
mode of using it. —

counteract the debility induced by the cold. It even ~~creates~~ awakens appetite in the middle of the night - in hot climates.

5 It weakens the Universal Appetite.

Perhaps this Languor in this Appetite may arise from the reflection of the difficulty of ^{supporting} ~~subsisting~~ children in a country where provisions are less abundant than in warm countries.

6 It renders sweating difficult, and uncommon, but when so moderate as to prompt to exercise - it promotes insensible perspiration. It produces a dark color in the skin.

7 It is unfavourable to vision, but this is probably owing to its being generally accompanied with ^{the} reflections of the rays of light from the snow.

8 Cold debilitates the functions of

9 v It is said to ~~dispose~~ produce the
Scurvy. This ^{disease} depends partly on
weak solids, & partly on vitiated
fluids. If the want of sufficient
exercise may weaken the solids, &
an undue proportion of animal
food may induce a morbid acrimony
in the fluids - But other causes to be
named hereafter must cooperate w:
cold to produce the Scurvy. + [go to x, p 66
& proceed to ~~ps~~ ps: 68.]

+ 10 ^{cold} There remains, one ~~more~~ ^{other} effect
of cold upon the body to be men-
tioned in this place, & that is, ~~the~~ ^{when used beyond}
that degree which induces palsies, ~~by~~ ^{the} contracting
the vessels; ~~it~~ it produces a

redness in the skin. This is the
effect of such a deadness induced in
the cutaneous vessels by the cold, that
the blood rushes into them and
forms ~~these~~ effusions similar to
those which precede gangrene, or
petechiae in ^{hence persons are pale - then red - then blue to cold.} ~~in many parts of the~~ ^{the} ~~body~~ ^{color.}
~~that drinking & other things the same effect.~~
Cold in its higher degree produces
gangrene, or in other words total disorga-
nization. ~~0 see below~~ ~~go to p. 56~~ ~~see to 56~~

Nothing more happens here that
what he owns is a ~~state~~ when direct
debility is induced by the sudden
abstraction of any other stimulus.
Eg: - loss of blood - the same
quantity abstracted gradually produces
neither convulsion or syncope.

12 ~~Little~~ cold reduces not only the
size of plants but of animals - These animals
are seldom more than 4 feet high. 13 Old
trees bleed from cold. I shall conclude this head

the native of a hot climate who visits a cold one? - I answer, that the duration of previous heat, being only for a single summer, is too short to produce insensibility in the sentient extremities of the nerves, - on the contrary it rather produces a protracted sensibility - and some tone ^{ch} tone - natural excitability - which is easily abraded by the sudden action of the cold, - the loss of that degree of - hence ~~uncommon~~ debility which is succeeded by ~~attended with~~ pain - & hence a fever from the slightest irritating cause such as motion - or perhaps even thinking afterwards. ✓ Much is ascribed in these cases to a sudden obstruction of the

~~It may have some~~
~~perspiration. It is probable that it has its effect,~~
~~but it is not a consequence of the cold.~~
 Perhaps its action ^{on} the pores may be

the existing cause of the fever, - or perhaps the cold acts only by destroying the ^{regul} ~~regul~~ ^{tion} of the system.

more Disease, & more
by remarking that there is ^{more} ~~probably~~ Animal
^{& more Disease} suffering from Cold, than from any other
evil that afflicts the world. ^{whole brute} ~~The cold creation~~
^{animal creation} groans with many under its effects upon
sensation, health & life. Who can calculate
the sufferings of Sailors, Soldiers & the labouring poor
from ~~being~~ out of doors and from the want of fuel &
~~clothing~~ within doors? But - the sufferings of animal +

✓ Pontoppidan gives us the same
influence of the
Account of the climate of Norway
upon the human body, He says +
inflammations are uncommon there
in the winter. - The month of Dec^r
1798 very cold & very healthy.

+ nature do not end here, ^{perhaps} ~~the whole~~ ^{many thousands of millions}
~~hundreds of thousands of animals die~~ ^{die of cold every year} ~~insects~~
& Birds ^{may} the whole brute creation
in cold climates, groans with many ^{under} its
painful ^{& distressing} effects upon sensation, health
and life. The diseases from cold are more

Nov 58.

Weather uniformly cold is generally healthy. The most healthy winter I have known in Philadelphia have been the coldest. I first observed this in the year of 64, ^{when a student of medicine} and have witnessed it twice since. Diseases of all kinds ^{looked up} are ~~seen~~ as it were ^{known} in Canada during the winter, unless once in many years when the air is thawed by a visit of warm weather. Dr. Guthrie speaks in high terms of the health & pleasure which reign in Russia during the winter. Even the Catarrh (the constant attendant of our variable winters) is unknown during the cold weather of that northern country. The return of Spring ^{in these cold countries} generally produces fevers

numerous, than from any other cause.
It is ~~more~~ at times a remote - ~~and~~
predisposing - or an existing cause of
nearly all fevers, and however strange
it may sound it is more so in warm
than in cold climates. The night air
in the Sea Egypt - and the East & West
Indies awakens into action the mias-
-mata which produce nearly all the
plagues - & yellow fevers & liver com-
-plaints of those Countries. In short
there exists not a greater enemy to
the health & life of man than ~~cold~~.
go to p 66 #

but these fevers are of a peculiar
 kind. They are ^{unlike the common} ~~by no means~~ in
 flame: ~~the~~ fevers of middle lati-
 tudes, and in many seasons they
 rapidly ^{infect} ~~those~~ gangrenous
 and of a putrid nature. ~~How~~
 shall we account for this? I an-
 swer, that the arteries by being
 long under the pressure of the sedative
 action of cold, lose that elasticity,
 and excitability ^{ch} which is the foundation
 of inflammatory action, and which is
 left apt to be destroyed or suspended
 in climates where the action of the
 cold is of a more transitory nature.
 In the diseases of cold climates, as
 well as warm, we see are generated

V You will please to mark here
the difference between the short &
long application of

V - Hence we find the inhabitants
of Hindland & of other cold countries bear
the heat of a Vapor bath at ^{not} nearly 200°
without feeling any painful sensations
from it, and

H The relative effects of cold are fur-
ther evinced by certain animals perish-
ing in a degree of cold in the fall,
which revives them in the Spring. In
the former season the excitability of their
systems is exhausted by the previous heat
of summer - in the latter it is accumu-
lated by the previous cold of winter. &
marked ^{generally that} the body suffers much less in passing from
extreme heat to cold, than from extreme cold to heat.

60

in one season, & brought forth in
another. ~~+~~ **H**

o Cold produces
~~It~~ ^{the} ~~sacheta~~ after a while the
same insensibility to heat, that it
does to itself. ^{see opposite to p 55.} Hence we find the Na-
tives of Europe bear the heat of the
West Indies much better than the
Natives of the Islands. This insensibi-
lity to heat, is only to be acquired by
the long action of cold, alternated
with little heat, on the system. In
a Climate like ours, we lose the
insensibility to cold contracted by a
single winter, by each succeeding
Summer. The man therefore who
attempts to fortify himself against

To Do.

1= This was exemplified in the Experiment
made by Dr Hodge & Dr Bladen ~~who were~~
formerly mentioned, who tho' they felt the
cold very sensibly after coming out of their
heated room, were not ~~at~~ indisposed from
it. Akerbi tells us ~~that~~ in travelling thro'
Swedish Finland, he often saw persons
come suddenly out of a vapor bath heated
to nearly 200, and stand half an hour
almost naked in the open air when the
ground was covered with snow, & the ~~Blad~~
0, without feeling the least inconvenience
from the cold. - 6



✓ You will please to mark here
the difference between the short and
long application of heat & cold to
the body, ~~the~~ when succeeded by each other.

Cold succeeding the application of heat to
the body for a short time, produces fever
coleras ^{tetanus} &c - But when it succeeds the

long application of ^{heat} it - it produces scarcely
any effects on the body, & is less visible
than in other circumstances of the
system. ^{from causes formerly mentioned, viz exposure} Again - heat succeeding the short
application of cold, produces inflam:
fever - but when it succeeds the applica-
tion of cold for 5 or 6 months it

produces fever of a ^{chronic} remittent, or
gangrenous ^{varicellous} type. ~~It would seem as if~~

indirect and direct putridity were
alike destroyed by the long continuance

the cold by ^{light} ~~thin~~ clothing, will
have his work to begin & do over
again every winter. If he ^{should} acquire
his long sought for insensibility ^{to} it
cold, it will be in the same way that
a farmer taught his horse to live
without eating. As soon as the poor
beast became perfectly inured to his
new discipline, - he died. ✓

The numerous & morbid effects
of cold ~~like those of heat~~ are not
necessarily connected with a vicinity
to the poles. On the contrary - health
and long life appear to be as com-
mon in cold countries as in
warmer, where men live agreeably
to reason. ~~At~~ where life is contracted,

of debility / = supposes that more
people perish from the morbid
effects of Cold succeding to heat, than
from the plague. This opinion is supported
by many other Authorities. Dr Boerhaave says
"however paradoxical it may appear Cold
is the Cause of almost all the diseases of
hot climates, to which alone Climate is
ascribable." p. 71. He adds further as a rea-
=son for this, that every person being weak
from heat is under a pre-disposition to
Disease from cold.

Sir Wm Gampel says it ~~must~~ not
 be ascribed to cold, but to the excessive
 Use of those stimuli such as Ardent
 Spirits, - Animal food - & dancing,
 which are all used to counteract it.
 - In ~~Canada~~ ^{the} where winters are ^{long} ~~short~~
~~and~~ ^{very} ~~too~~ cold, ^{being} there are in
 many countries, such provisions
 made against it as that it becomes
 the pleasantest season in the year.
~~There is~~ Thick walls, - double windows
 - and stoves ~~as~~ at home - and
 furs and footstoves ^{in the open air,} ~~also~~ afford an
 ample protection from the cold in
 Canada and Russia. This is so much
 the case, that Dr. Genthie tells us
 that the Russians complain ^{very much} ~~of~~

V In that country the effects of cold
are obviated by stoves which pervade by
means of pipes every room in the house -
- by double glass windows - and by being
enveloped in ^{wraps} furs, when they exposed
themselves to the air.

of the difference between a winter
 spent in the Southern parts of Europe
 and in ^{their} own country. I once
 heard a ^{New York} lady who had passed a winter
 in Canada say that she had never
 felt so little cold in a winter in her
 life before. From these facts it would
 appear, that cold produces diseases in
 northern countries, chiefly where they
 do not conform to the weather in
 the structure of their houses, ^{in the} application of fuel in
 their dress or manner of living, &
 that ^{cold} it is most injurious when it is
 alternated with heat, or combined
 with moisture. Hence we find the
 most acute inflamm^y diseases produc-
 -ed by it in middle latitudes. It is
 difficult to say in what latitude, it



produces these diseases in the greatest
 number & most acute degree, for
 a comparison will be just only
 when it is made between a people in the
 same states of Society. — In Britain
 the variable Climate of Britain we
 should expect to find them ~~very~~ ^{most}
 most frequently, but luxury — and
 effemacy have nearly banished very
 blood from that Country. Inflam-
 mations are as yet very acute in Per-
 sylvania, ~~therefore~~ our Citizens are
 in the same state of Society that the
 people of England were in Dr.
 Sydenham's time, when Bleeding
 small beer, & cool air cured nearly
 all their Diseases. If our fellow



0.5

citizens on the Potomac, & even
in the States beyond it, do not bear
bleeding as plentifully as we do, &
~~we~~ are disposed to ascribe it to their more
indolent and luxurious mode of living,
for in more southern climates the
free use of the
lancet is the only remedy for the
diseases of cool weather. Dr Hecchoorn
could draw less than ^{from 716 to} 320 of blood at a time
a pleurisy in Minorca. Dr Gries
says that nothing but copious Uf:
cured the pleurisies of ^{the negroes in} Jamaica was
in those cases where the pulse was
scarcely perceptible, - & Dr Hoorn informed
me that after a north west wind,
the diseases in ^{Pleuris inflam^y} fevers of
which required as
plentiful bleeding as the diseases of

V The climate therefore of middle latitudes is not necessarily unhealthy, - even the frequent changes according to Dr Huxham may be considered salutary. It only requires more care & the exercise of more reason to enjoy health in such latitudes than in less variable climates.

Dr Sydenham's remark - nearly all fairs from neglect &c in beds: -

+ too a man died in cold at 81. or 90° below 0 - when asleep - who lives when awake & in action ^{in a degree} where the cold is at 30° below 0.

this Country -

The effects of the sudden transitions
of the air from heat to cold, & cold to heat on the
body, do not necessarily produce diseases.
They may be prevented by ^{a careful} ~~such degrees~~
of caution in accommodations of our
drefs and bed cloaths to the changes in
the weather. This is more necessary
in sum the Spring - Summer, & Autumn
than in Winter. I have known many
thousand people indisposed ^{with fevers} from wearing
too thin cloaths or sleeping under too few
bed cloaths, but never one person
from ^{an excess} ~~wearing~~ in either of those articles.
go on to p: 68

& The cold acts ^{more} ~~most~~ powerfully on
the system in the sleeping, than in
the waking state. Hence ^{the foundation of} nine out of 10
fevers is laid in the night, & hence



Cold acts more powerfully upon the body when ~~scarcely~~ ^{the} stomach is empty than when it is full of Aliment - Hence famine and frost frequently go together in sailors who suffer from the snow.

Old people suffer more from the cold than persons in middle life. Hence the reason why they are so often found paralytic, or dead in their beds in very cold spells of weather.

Cold acts powerfully upon persons addicted to the use of spirituous liquors.

Hence the reason why they often ^{too well} yield ~~the~~ ^{the} bills of mortality in the winter ~~their lives to a cold night or~~

months. Three notorious drunkards

have died in our city in the course of the last ^{Feb in the winter of} ~~year~~ 1791-2 ^{two of them} during the coldest week in ~~last~~

v fact of Lake Superior by 3 - never
frees - vapor - frees in the air & cuts
the base. See p: 88. of 4th Ann: plumb.

~~some the 1st Jan: 1792~~, & all with
great Diseases ^{originating from} of great debility. Dumb-
bards are generally chilly, when not under the
Chill even ~~proceeds from the vigor of~~
~~the vigor of strong drink.~~
~~the stimulus strong~~ Cold acts but
feebly upon Children, from the Vigor
of their stimuli. I have heard of an
Indian woman being found frozen
to death ~~but~~ with a living Child on
her back. — return to — p: 36. —

+ Moisture increases the sedative
effects of Cold by conveying off more
of the heat of the body. ~~The~~ The Cold of
Great Britain at 30th is much more
disagreeable than the Cold of Pennsylv-
vania at 10th. The Russian sailors
who spent part of the winter of 1779
at ~~Rhine~~ Portsmouth declared that

‡ The Air of Holland owes its unhealthy quality to its moisture. This is so great in the evening & at night as to make the Dregs of winter necessary in Midsummer. - Dr Franklin denies that we take cold from moisture even from sleeping in wet sheets - but this is contrary to ^{reason} ~~all~~ ^{any} Observations. (C)

✓ The cold hand of a physician will often produce a short rigor in the whole body of a patient, & I know a gentleman who ~~labours under~~ is subject to a Cough, who can excite a fit of coughing at any time in the night only by putting his hand out of bed. Gollymer.

‡ There ^{was lately} is an old man in this city of the name of Godfrey Wiltren who can predict the approach of snow here, that is rain, in the atmosphere by a sickness at his stomach. A similar fact is related by Dr Darwin, ^{many} Birds ~~probably~~ have this sympathy with

69

^{moist}
the cold of England ^{is} was far more
distressing, & insupportable than the
coldest weather they had ever felt in
Rusia. —†

Cold acts more or less certainly,
~~upon the body~~, according as it acts on
the whole or a part of the body, or upon
a part which has been confined from,
or exposed to the action of the Air.
— Cold feet often produce Catarrh — Colic —
and even palsy & Apoplexy. & A current
of Air against the back often produces
tumor & stiffness & inflammⁿ. in that
part of the body, and ^{or in other words a trismus} ~~there is~~ a
or spastic tetanus.
young woman who caught cold only
by leaving off a ribbon which she
much ^{Misses} takes cold by wearing short Skirts =
usually wore on her caps. The Abstraction
of Stimulus in a part, cold in these

~~I told inducing gangrene on the
limbs. How? - the permedy - accom-
modated to adaptability I.~~

~~approaching rain - hence the peculiar
& motions
Noises they utter before it comes. Ducks
seldom fail to indicate wet weather by
rising from the ground & clapping their
Wings. This sympathy natural to birds
is acquired in many Chronic Diseases to
all the changes in the weather in the
human Species. It is a kind of supersensitized
sense. go to p 71. 0 In health we have a
sensation of an approaching fall of snow.
- Hence the common saying - "It feels like
snow" go to p 71. 0~~

cases, excites the action of other humors
to restore the equilibrium of γ system.
The fever is the effect of too much
action for ~~this~~ purpose. It is from
having so often seen the ill effects of cold
feet - that I seldom give my advice
in a chronic disease, that ~~I do not~~ ^{without}
charging my patients to keep their
feet ^{the extremities of} warm - for by the feet & the mouth,
I believe we receive 9 out of 10 of all
the diseases to which the human body
is exposed. ~~§~~

How far have we viewed the effects
of heat and cold, in their simple ^{states} ~~as~~,
and combined with moisture.

~~Cold~~ The same degree of cold are
more sensibly felt in windy than
in calm weather - owing to the

positive & relative
✓ The effects of heat and cold are very dif-
ferent in sickness from health, & vary
according to the stages & states of diseases. of
this hereafter. ~~turn back to~~ they not
only suffer from their presence, but
they have a premonition of their approach.
turn back to p. 69 #

U Thus in the winter they dispose to
diseases of the head - in the Spring to ^{diseases} the
lungs, and in the summer & autumn to
the alimentary canal. ^{The actions} ~~the seasons have~~
of the seasons on ^{health &} ~~human~~ life has been
compared to the different stages of human
life. ~~winter is~~ The winter has been compared
to the infancy - Spring to youth - summer
to manhood - & autumn to old age.
It is remarkable the diseases produced by
each, are the diseases of those 4 stages of life.

Wind carrying off the insens heat of
 the body discharged with the insen-
 -sible perspiration. I think I have
 oftener known Catarrhs & other in-
 -flam^d affections induced by windy
 than calm cold weather. — V

0 Thus far have we examined the
 effects of ^{the air} ~~heat & cold~~ upon the body,
 as far as they relate to their sensible
 qualities. But they both act differently
 in different seasons. ^u Again heat & cold
 act differently in
 different months in all middle
 latitudes. — They act differently in
 towns & countries — in cultivated
 & uncultivated countries, but this de-
 -pends ^{in part} on the combination of the
 air with certain ~~islands~~ ^{circumstances} ~~circumstances~~
 latitudes

V. Bring in birds from all quarters in
Diff. Countries & their influence on health next
year.

20th Dec 1871

It therefore will come in ^{under} our next
 head. I shall only mention the effects
 of the sensible ^{qualities} effects of the air in
 different ^{seasons &} months. In ~~some~~ one of
 the seasons, the air is rendered ^{unhealthy} ~~more~~
 by mixture wth exhalations. This shall
 be mentioned in its proper place.

① To exhibit the influence of seasons
 and months in a climate nearly similar
 to our own, I shall furnish you wth
 an extract of a Journal of the deaths
 in the Parish of St Nicolas in Boulogne
 on the ^{in the lat. of 50°} sea between the years 1776 and
 the year 1783. It is taken from D^r Daiguan's
 tables of the variety of human life - a
 curious & interesting work lately put
 into my hands by Mr Jefferson ^{Dying his residence is this city.} I shall
 first give the amount of all the deaths

... ..
✓ The same taken notice of by Dr
Heberden Junr in London. in his work.

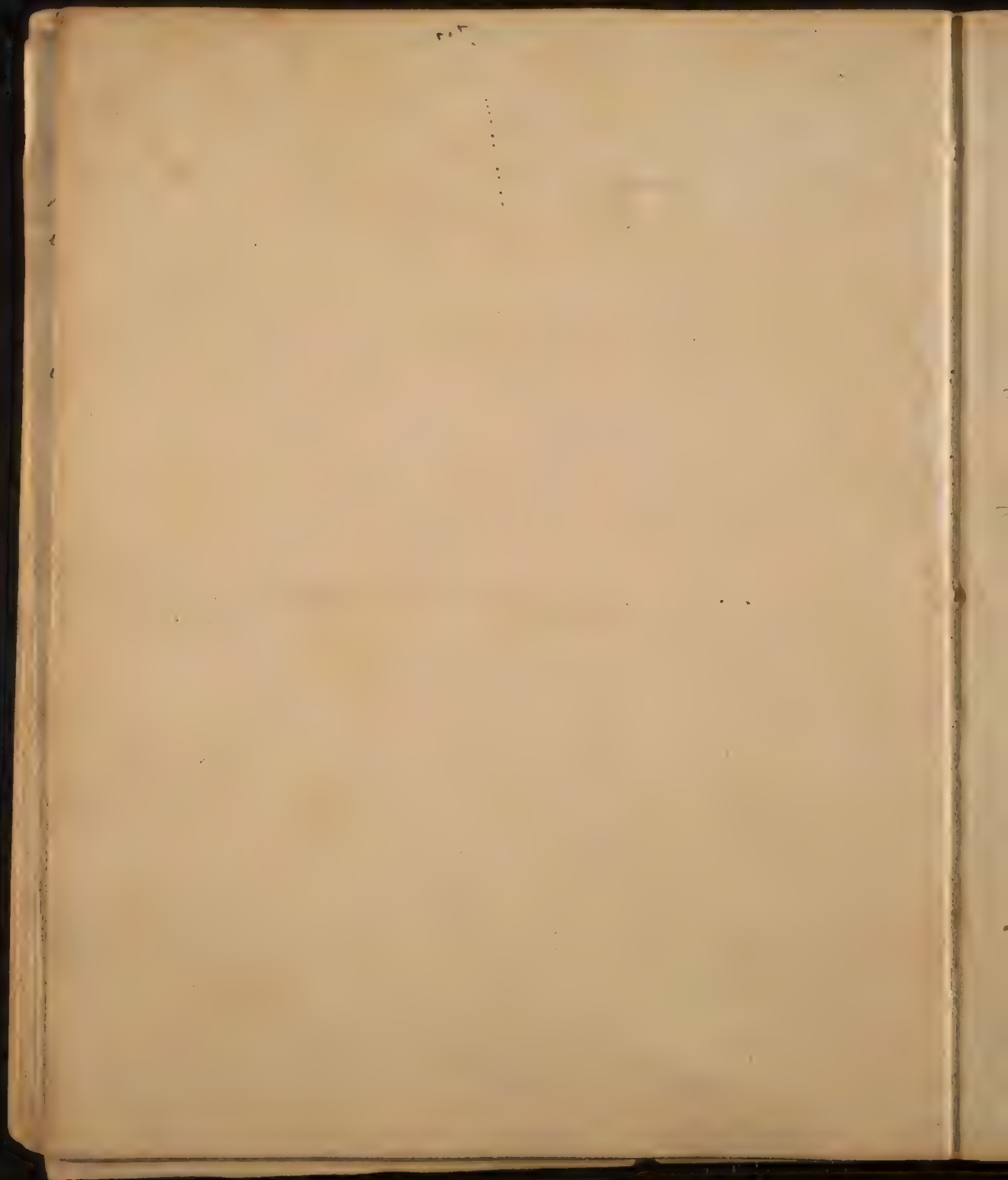
in each of the seasons that ~~were~~ are
 included in the above mentioned seven
 years. In ~~seven~~ the winters 365 - In the
~~spring~~ ^{Spring} 292 - In the summers 277. -

In the Autumn 357. - in all 1291. -

you see here the ^{2nd degree of} greatest mortality is
 in the Autumn - owing, probably to the
 combination of the Air with morbid
 exhalations. I have observed the same
^{degree} ~~excess~~ in the mortality in our city in
 the Autumn - and from ~~this~~ ^{the} mixture
 of morbid effluvia with the Air. - The
 next season ^{which there was the greatest} ~~is~~ the number of Deaths is
 the winter. ^v This is unlike our Climate

in ordinary years. I suspect some epidemic
~~from contagion~~ must have cooperated with

the cold in some of the above winters.
 - The Influenza - the Measles - and



74
the ^{malignant} ~~pestilence~~ fore throat which prevail
frequently in winter, often swell over
bills of mortality in that season far
above any other season of the year, but
all these act independant of the season-
able qualities of the Air. —

The Spring & Summer are gene-
rally the most healthy seasons in
all climates between 50° and 35° —
of latitude.
It is remarkably the case in Pennsylv-
ania. —

~~Therefore~~ I shall next mention the
influence of every month in the year
upon human life, taken from the
same register of the parish of St. Nicolas
by Dr Daignan. —

In January there died in the course
of seven years 142 persons, of whom



From a review of the influence of the Wea-
 -ther in each of these months, it appears
 that the most sickly of them was Jan.
 - This is not common in the middle
 states except from Epidemics - or except
 in open winters. The principal mortality
 in this month when intensely cold
 is among old people and persons previ-
 -ously debilitated by Ardent Spirits. -
Feb. and March appear to have been
 very sickly, nor did the mortality abate
 much in April. ~~These~~ The weather in
 these months is very variable, and
 often proves fatal to Chronic patients
 especially to persons afflicted with
 the Consumptions. The inflam^d dis-
 -eases produced in these months

V Hippocrates expresses the same
idea in other words. He says that
the diseases of winter are seldom
cured till midsummer, & the disca-
ses of summer are seldom cured
before the middle of winter. Van.

~~An important observation!~~ - ^{directly} says
that the time in w: ^{the} venereal fever sh^d.
begin is at the vernal & autumnal equinoxes,
but that they are antedated, & ^{postposed by} ~~postposed by~~
the weather - hence the ^{sometimes} former appears in Feb:
& the latter early in Sep: - They are according to

seldom prove fatal in our climate.

June and July are the most healthy months in the year. The same observation applies to the climate of Penn-

sylvania. ^{The latter} ~~July~~ ^{end of July} is sometimes fatal to children - but

I have uniformly observed June to be the healthiest month in ^{in this city.} the year.

The ~~same~~ Dr. Sydenham says that

the diseases of winter spend themselves in June - and the diseases of summer in February. I believe there is a founda-

tion for ^{the same remark} ~~this~~ remark in ^{the middle} ~~many~~ of the ^{own} ~~history~~ of America.

- Most of fevers bear bleeding in May, and most of ~~them~~ the fevers of ~~December~~ Decem^r. Jan^r. and Feb. exhibit marks of the ~~emitting~~ ^{emitting} & inter-

Pigeot most frequently antedated. Hence he
says a medical Spring should begin on the
12th of Feb: Summer on the 12th of May. Autumn
on the 12th of August, and Winter on the 12th
of November. —

fevers more especially in discharges of bile. Now - according to this remark
^{breathings of the}
 the month of June may be ascribed
 to a kind of solstice in diseases. - They
 seem to pause for a few weeks - but it is
 only to ^{it} change one set of destroying ~~in-~~
~~struments~~ ^{weapons} for another. -

The month of ~~Sept~~ August is more sickly
 by our table than July - 85 - The
 proportion of deaths in that month
 is much greater in our city.

The months of Septem^r - Octob^r and
 Novem^r are next to in ^{their} fatality mortal-
 ity to the winter months. This is
 probably owing in part to exhal-
 -lations, but much of it may be as-
 cribed to the contrast between the

V This air by its coldness & dampness
~~renders~~ renders riding in the night much
more fatiguing than in the day time,
for they both produce great direct debility.
Mr Bruce speaks of the Damp Night Air
After a hot day affecting even the mind,
for he says the Sailors who conducted
him up the Nile, always discovered strong
marks of cowardice as soon as the chilling
night air began to act on their bodies.

Colds are more frequently taken by ex-
posure to the night air than in any
other way. In Spain it is often caught
by serenading. Hence says Brydone it
is gallant to make love in that country
only in a hoarse voice. — The yellow
fever is oftener excited by the night air
than by any other cause —

day & warm air of the day, & the cold
 and moist air of the night. — The
 sickly and mortal season begins in
 Pennsylvania about the 20th of
 August. It is partly occasioned by
 exhalations, but chiefly by the damp
 evening air to which our citizens
 expose themselves in their summer
 dresses. The quantity of dew which
 falls after this time is so great as
 to resemble ~~the~~ a gentle rain. It fre-
 -quently sets springs which have
 been dried up for six weeks a flow-
 -ing. — This ^{richness &c.} vivacity generally
 continues till the frosty ^{nights} come on,
 Unless heavy rains should fall in
 the mean while, ^{for} they both alike

~~V The evening air is from~~

V ~~The~~ Under the head of the sensible
qualities of the air I mentioned its
rarity & density.

Air highly rarefied such as exists on the
summit of ^{very} high mountains ~~is~~ produces
^{many} ~~very~~ disconcerting symptoms. It such as
great muscular weakness. ^{hence} persons
in ascending them near their summits are
often obliged to stop in order to rest. ^{This} ~~has~~
~~the~~ ~~muscles~~ has often been felt on the
Alps. Even the mules which ascended them
were affected with a similar immobility
of their limbs with men, and with great
difficulty of breathing - panting, & the
emission of plaintive cries. Saussure
~~says in~~ ^{walking on the summit of} Mount Blanc in
Switzerland that he could not advance
15 or 16 steps without stopping to take

check Bilious diseases, - thus and both
in the same way by destroying morbid
exhalations. ~~+~~

The table which I have read to you
will furnish some very useful remarks
on the influence of the ~~see~~ remote causes
of diseases on persons of different ages,
and conditions, but this will come
in the place marked for it in our 4th
-labour. ~~Q~~ go to n^o 3 new copy p. 1.

Q we come now to speak of differ:
impregnations of the Air as remote
causes of diseases. ~~and~~
~~or kind~~ miasmatic exhalations.

1 of marsh effluvia. These are a
fruitful source of diseases. ~~Two~~ ^{Three} circum-
stances are necessary to produce them
viz heat and moisture, ~~The heat to~~
the ~~vegetable & animal substances.~~ ^{vegetable & animal} ~~substances.~~ ^{so} and

breath, the $\frac{1}{2}$ at this time in the Barometer
stood at 12 inches. ~~Other~~ ^{Other} effects of these great
altitudes ~~are~~ ^{are} a quickness of pulse - palpitation
of the heart - sickness of the stomach - loss
- thing of food - ~~on~~ ^{propensity} ~~conscious~~ ^{to} great thirst, ~~but~~
have an aversion to spirituous liquors. All these
effects of breathing this rare atmosphere go

& nor was there as yet any quantity
of vegetable matter on the ground to
putrefy, & mix ^{to} ~~with~~ ^{the} the animal matters.

+ off after resting a few minutes, but
return with the least exertion. ~~all~~ These
~~symptoms~~ have been attributed to a
deficiency of oxygen in the upper regions of the
air, and a ^{most rapid} consumption of it ~~beyond the~~
~~proportion~~ the combustible matter in the
blood - such as I said formerly constituted
the ^{impure} air discharged by Respiration. In
addition to the effects above mentioned,
I ~~now~~ ^{takes notice of} ~~noticed~~ two others viz
Sickness & great pain from the action

continued for some time. I said that
 moisture must be combined with this
 heat, for the sake of the peneshae
 nothing unwholesome from the dry
 ground, nor from marshy ground when
 it is ^{completely} covered with ^{the same with 10 leagues in} a bed of water of
^{Egypt.}
 To show that heat is ^{essential} to
 the production of miasmata, I
 shall relate the following fact. Some years
 ago the meadows below this city were
^{in the month of April} overflowed, and many animals as well
 as fish were left dead on the meadows
 after the recede of the river. In vain was
 Sickness looked for after it - for still
 yet there was not heat eno to pu-
 rify these animal matters, or to ex-
 hale them in the air. This fact was

of the Rays of the Sun shining Directly upon
the skin. +

~~in its changes from different degrees
of Density & rarity
creates great changes in the body, except it
sometimes disorders the body. Invalids
are most sensible of it. Mulcaill a French
writer ascribes a number of sudden Deaths
which occurred at Phiviers in 1747 to a
diminution in the height of the Air. Old
men & it fell suddenly from 28 to 25.8 inches - each
the 2 boys fell suddenly from 28 to 26.8
with a diminution of 1000 pounds of Air. Old
that is one such Pours & Rheumatic pains
are often made worse by a sudden diminu-
-tion of its weight. -~~

+ In Baron Humbolt who ascended to the
Summit of the Lembarallo, the high a mountain
-tain 20,000 feet above the level of the ocean, ^{in S. America}
of course the highest mountain in the world,
the rarity of the Air produced he informed ^{me}
he vomited from his ^{nose} mouth & lips, a
red ^{ness} of his eyes, Achne at his stomach,
& a pain in his breast which continued

Once proposed to me by the late Dr. Bond, but without the explanation I have given of it. ^{Some} ~~about~~ ^{five} years ago, a similar frost happened in those meadows in the month of May or June. From the full operation of heat at that time, I guided by the event of the inundation in April ^{just mentioned} I ventured to predict that no extraordinary fish-
-crop would follow, and the issue was agreeable to this opinion. many facts might be mentioned ~~to~~ to prove that exhalations ^{fluidity} from fluid bodies of water do not produce diseases. Mr. Bruce ~~in~~ remarks in his travels that rainy seasons w^h perfectly covered the low grounds were never unhealthy in one of the sickly

V & Dazilles in his Account of the
diseases of the negroes remarks that
at Cayenne when ^{there is much rain &} the morasses are
deeply overflowed, the people are most
healthy - But at St Domingo it is the
reverse - When there is much rain,
and no morasses ^{to} overflowed p: 10

— several Days afterwards. His pulse
of Cold was very great, altho' the φ was
between 40 & 50 of Fahrenheit. By his
Indication the quantity of Oxygen was
reduced to 19 parts in the 100. Part of
the fineness & softness of the frog. ^{back to p 82. O}

~~In Women the variations of
Baromet. in Foulled mostly
the last p 30.~~

~~An excessive in Density, [that is above 28] by
compressing the lungs renders the reflux of the~~

Countries which he visited. In the Delaware state heavy rains by overflowing the low grounds have in one instance presented a sickly fall. In the same season bilious fevers were common in the high grounds of Pennsylvania - for here the rain was only sufficient to produce malarial fevers on the low grounds, but little in 1804. ^{These fevers on the low grounds are called malarial, but these are general on high grounds in humid states.} The sicknesses of autumn are frequent. The same in 1806 - great rains & danger to the states & healthy, - by depend on very slender circumstances, which if lightly attended to, lead to a conclusion that there ^{are} no fixed principles with respect to the generation and action of morbid ^{miasmata} ~~contaminations~~. A summer ^{which} perfectly dries the low grounds & on perfectly covers them with water will generally be healthy. Superficial observations ^{do not} who consider heat & rain as

V I have said that heavy rains
which cover the ground with
water prevent exhalation, but
I have mentioned a case in which a
my 4th vol. of Inquiries
heavy rain promoted exhalation,
i.e. by destroying the green covering
which had covered a pond of stagnating
water. ~~water~~ ^{N.B. Humboldt mentions that}

Rain on the west coast of Africa induced fever - perhaps
from some cause. ^{from some cause.} (84)
It is remarkable that in
close swamps where there is no
exhalation, there are no bilious
or intestinal fevers. The access of the
sun to these swamps is necessary
to their producing disease.

It is most hurtful where salt and
fresh water mix in the southern states.
millicut.

under relative circumstances, 84

~~generally without effect~~, would be led
from this to doubt the efficacy of both
in producing diseases, and to ascribe
them to ~~they know not what~~, ~~they know not what~~
~~quality in the air~~, ~~as to the fruits of~~
~~origin, importation~~. It is only those
the season, ~~by attending to moderate~~
degrees of rain w^{ch} produce moisture, &
those degrees of heat which do not sud-
denly dry the ground, that ~~produce~~ ^{generate} the
effluvia insensate w^{ch} produce bilious
and intermitting fevers. Fresh & salt
water mixed in marshes most apt to produce disease.
= The matters which are exhaled are
of said to be ~~of a~~ ^{formed from} animal & vegetable
matters, but many facts ^{prove} ~~negate~~ it for:
beside that they are chiefly of vegetable
origin. ~~They operate perhaps~~ ^{are often combined}.
but each acts separately, as I shall say directly, go to
matters putrefy in the neighbourhood
of towns without producing a single

Here enumerate them. from vol 4 of Enquiries.
I have hitherto spoken only of marsh
then go to B. # p: 86
miasmata as the remote cause of disease,
but many vegetable ^{& animal} matters in a state of
putrefaction produce the same effects. I
shall briefly enumerate them. 2 Cabbage.

IV Semiar's facts, & Dr Johnson's at

Sorrat in India 3 potatoes - 4 pepper
5 Indian meal. 6 Onions. 7 Mint. 8 Aniseed
& Caraway Seed in the hold of a Ship. 9 Coffee
Philad^a in 1793 & 1798. and in Jamaica in 1793.
10 Cotton. 11 Hemp. flax & straw. 12 Carvaps of
an old tent. 13 Old books, old paper money.
14 The Timber of an old house & huts in the 2^d year of stinking. 15 Green
wood. 16 green timber of Ships. 17 Stagnating
Air of Hold of Ships. 18 D^r Cellars. no cellar doors or
& Chimneys best in them. 19 Bilgewater. Dr
Rowley. Gutter - Dock - Scurvy, water. 20 Air
emitted by stirring ~~from~~ pond water. 21 a
Dead
Dog & a Duck pond. — 22 weeds
near a house. 23 the Ocean - Dr Clark.
are. 1 Human Dead Bodies. 2 a broken Bottle.
-cists. 4 fish 3 5 Raw hides. 6 putrid Beef.

disease. Mr Howard tells ^{us} the bodies of
persons who perished with the plague
at Smyrna ^{in one instance} putrefied in the open
air without spreading the disorder. The
stench of these bodies he says passed ^{this} over
the Governor's house in a certain
direction of the wind. Neither human
or any other animal ^{always} faces are un-
friendly to health, - or Edin² & Madrid
would long ago have been depopulated,
^{and} ~~was~~ ^{would} stables have been ^{long ago} removed
from the neighbourhood of our houses.
- but putrid seeds of all kinds produce
fevers. Dr Rogers in his Epidemics of
Cork ^{describes} a fever from a putrid
bed of cabbages. After all ^{there is no} ~~I think it~~
^{doubt} ~~but~~ ^{putrid} animal matters
~~most probable that~~ ⁱⁿ ~~in~~ ^{air}
when mixed with wind & certain

It is remarkable that in swamps
where there are no exhalations people
work & enjoy good health. -

5 It has a malignant
in Newbury port in 1796 by the effluvia of
putrid fish & putrefying whale once prod.
What is the nature of these ~~malicious~~
an epidemic fever in Holland,

0 miasmata? - From the effects of fires
& burning & in destroying them they
have been supposed to be animated - on
organic bodies. This may be the case, but
it is not very business to decide upon this
question. It is remarkable that mosquitoes
and other insects abound with bilious
fevers. - But later observations have
taught us that as they contain
a large portion of Hydrogen on
which their action depends. -
~~feverish~~ Bilious fevers which
are produced by miasmata.

circumstances produce diseases. ~~For~~

~~Dr Pringle has established it.~~ & turn back to 85-

[On what part of the body do these ~~micro-~~
turn over to p: 87 1st 2nd 3rd
micromata act? On the arterial sys-
tem in which they act as stimulants.

[This stimulus in this case is generally
direct only, in which case a fever of
violent ~~excessive~~ action is induced - when the
stimulus of the micromata exceeds
great. They first
the force of ~~the stimulus~~ produces
interm?

indirect debility - hence bilious fevers
are often ushered in with syncope - &
& apoplexy. Instances
~~some times~~ in ~~these~~ are not want-
ing of these micromata producing
sudden death.

2nd Particularly the brain,
3rd They act on the nervous system
probably this the evidence of the
arterial inducing head act. and

Bilious fevers ^{are} produced by ~~marsh~~ miasmata
are generally accompanied with
Inflamⁿ: or Congestion in the liver,
& wth a preternatural secretion, &
excretion of Bile. Galvani produced
a similar & morbid state of the liver
by injecting Hydrogene into the
Oesophagus of fowles, & afterwards
tying ^{up the gullet} ~~them up~~ untill they died. The
livers of brute animals which are
killed in the fall when it is bilious
fevers prevail, are generally enlarged,
& sometimes ulcerated, probably
from inhaling the ^{gas} ~~hydrogene~~ of
marsh exhalations.

⓪ In mild cases of this disease. They
act by discharging bile from the
Stomach. The miasmata not only adhere
bile into the stomach, but they produce
such an action upon it, as to induce in it
the secretion of the black matter called b: vomit.

convulsions. I have seen many inter-
mittents ushered in by the latter symp-
toms. — creating Sickness & Vomiting.

+ ^{1/2} They act on the stomach ~~of the patient~~
~~and canal.~~ It is highly important to attend
probably this the indication for the use of
to this, as it furnishes the indications for the use of
of the bile. [2 The liver suffers more or
less from ~~fevers from~~ miasmata.
less in all ~~bilious diseases~~ miasmata.

This I ascribe to a peculiar dispo-
sition in the miasmata to act upon
that viscus, so as to increase the secretion
& excretion, ~~of bile~~ & perhaps to vitiate
the quality of the bile. These facts
disposed to ~~condemne this opinion from~~
~~having fully adopted~~ ^{add weight to} the old & exploded
doctrine of ~~bilious~~ specific tinea-
li. The miasmata produce in the
stomach & bowels Sickness - Vomiting

✓ cattle, hogs & sheep that feed on low grounds
in the fall, have often large inflamed & ulcerated livers.
✓ Some times the bile is ~~often~~ mixed w.
the blood in these fevers, and produces a

deep yellow tincture on the skin. An
Epidemic of this kind is described by
Dr Haller in his Pathology. I ~~saw~~ ^{saw} it

in the American Army in the
Autumn of 1786. It is totally dif-
ferent from the yellow fever of the
West Indies. It is called febris biliosa-jeteroides

by Sauvage. ^{same} which produce bil. fevers
+ Does the ~~same~~ ^{same} miasmata act on
the bowels so as to produce dysentery?

~~This is a knotty question. I am disposed~~
^{answer} ~~believe~~ ^{that} they do, and the two diseases are
produced by the greater or less disposition of
the system to one or other of those ^{cases} disorders,
or by the combination of the miasmata
with more or less cold, or moisture.

& Dysentery, & in the liver pain - and
 inflamⁿ. - The bile is often so ^{vitiates} ~~vicious~~
 in its ^{qualities} ~~as~~ as to excoriate the fauces
 & rectum in escaping upwards or
 downwards - and ~~this~~ after it is dis-
 charged to occasion Syncope by its highly
 offensive smell. V. go to 2^d p 86 @

↳ They ^{are said to} act on the blood in some instances,
 so as to dispose it to a Septic tendency. For

↳ ^{Dyscrasia} the ~~disposition~~ of the blood ^{appears to} appears
 in these fevers ^{may} be the effect of the
 violent ~~diminished~~ action of the Arteries on it
 rending & tearing it to pieces. - This expⁿ.
~~of blood deficiency of action takes place~~
 of the cause of discoloured blood, you will find in
 Denham. The action of Virus mata is rendered
 more certain by their ^{being} combined with
 cold or moisture. Hence they affect the
 system most certainly in ^{the} evening

calculations of the
from the same well pond a Dysentery
will be produced on the inhabitants
of the summit, and a bilious or enter-
-mitting fever on the inhabitants of
the declivity of the same hill. On the
summit of the hill, the vias water
are combined with more cold, and
moisture than below it. Mr Bruce tells
us if he often saw the Dysentery and
bilious fever alternate with each other
at Mapual. Dr Sydenham ~~remarks~~
adopts the idea of it being produced by ^{the} ~~one~~
same kind of vias water. He calls it the
Dysentery "*febris Enterovessa*". Dr Chesbon
& Dr Clark of the same ^{Dr Jackson is} opinion.
not only the Dysentery, but the ^{bilious} ~~enter~~ fever
depends upon the same ~~cause~~ ^{cause}

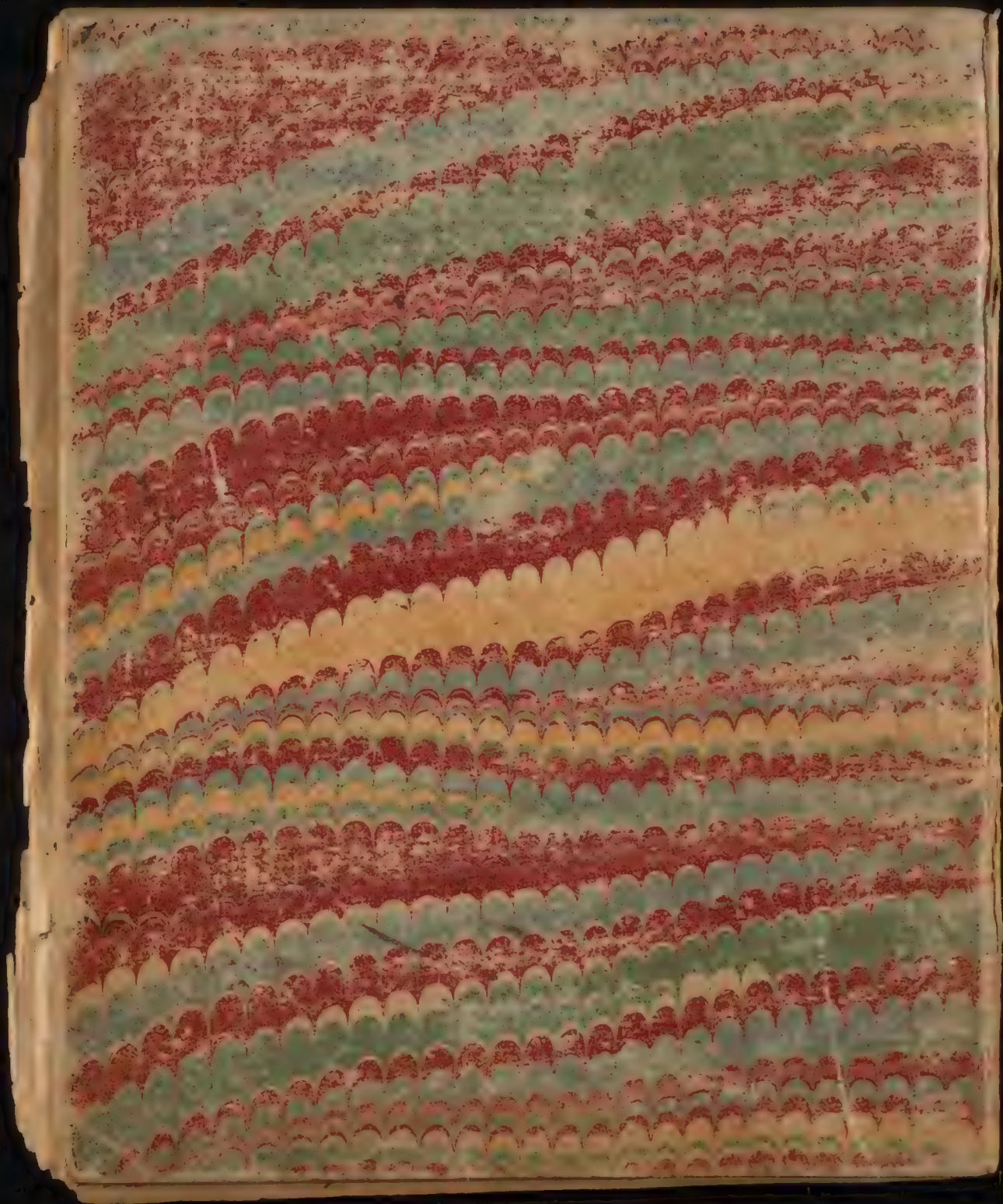
Trinacra under different circum-
stances of weather or constitution.
The feil fever puts on sometimes the
[All the fevers produced by putrid
symptoms of Dysentery. —
vegetable exhalation are at more
or less contagious. — This is evident
from the authorities of both the kinds,
Dr Cleghorn — Dr Clarke — Dr Rodgers —
Dr Zimmerman — Rivinus &
in short from all the writers on
Epidemics, & I have ever met with
it. Innumerable proofs of it have
occurred in our country, & many
others your own observation, nor ^{will} ~~was~~
^{you see the} ~~the~~ facts ^{which prove} ever called in ques-
tion by body, but by the College of
Philadelphia the Professor of the ~~theory~~ ^{Practice} of
Physic in the University of Pennsylvania
who tho' he ^{opposed} ~~has~~ taught it, and I am
satisfied does not believe himself. X

fevers more than Cotton or woolen,
 Attho' the latter are supposed to retain
 it longer. The fevers of the Campaign
 1865 were ascribed in part to the
 use of the rifle shirt which was uni-
 -versally worn by the Southern troops
 during the late War. —

2 Confinement in a Crowd. The plague
 in Egypt has been ascribed to the inhabi-
 -tants of the shores of the Nile crowding
 together during the overflowing of that
 river. Jails - hospitals - and even
 Schools often became the sources of
 this disease from the confinement and
 concentration of ~~men~~ the discharges
 from the pores of the human body.
 & The discharges from the body are more

X How long the miasmata may lie in the body before it produces a fever is unknown. many facts prove it to be for 20. & even 30 days. But some facts ^{it is said, make it} much longer. ~~But some facts~~ ^{D^r Jackson says 6 months.} ~~which places the fever~~ ^{new comers seldom take the fever} on our neck till the 2nd year ^{after they arrive.} The ~~Ch^d M^d Reed~~ of Congress informed me [March 2. 1799] that the troops who returned from Canada last war never had Rheumatis till the 2nd fall after y^r return. no other persons had that disease, and no one soldier escaped it] = The sporadic cases of yellow fever which occur in the winter & spring months ^{are said to be derived} from miasmata still floating in the system. ~~refers to p. 89. D.~~ ~~after the history~~

I have given of the sources of miasmata, or putrid
 miasmata, and of their effects upon the human
~~body~~, body, you will be surprised to hear
 that the existence of these miasmata has been
 called in question - may more, that Exp^t made
 with the Indianer ~~persons~~ ^{both} in America and
 America prove that they have no existence at all,
 and that the atmosphere supposed to contain them,
 is two degrees purer than the air of adjoining, and
 healthy mountains. To these exp^t I shall only apply
 that the same mode of reasoning would prove the
 non existence of those matters ~~in~~ in the air which
 produce the small pox, measles, & are hundred odors
^{or} float in the atmosphere, none of which I believe
 ever discover themselves by means of any of the
 chemical test that ever has been invented. As well might
 we might we deny the existence of spirit, because it
 cannot be made obvious to our senses as the case is:
 because they are not to be discovered by the instrument.
 of miasmata, The best of the Indians, and the
 Game Wards of the United States ~~are~~ have furnished
 within the last ~~12~~ ¹² years many - many thousand
 proofs of their existence. To deny them is to renounce ^{our} reason,
 all observation, & even the witness of our senses. go to p 84. ©



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Lectures on Pathology.
Morbid Effects of Cold. p: 47.
of Rarity & Density of the Air 80
of Impregnations & mixtures of
the Air — — 80

v I shall mention its positive, & 2^d its
relative effects. —

falls more ^{wholly} ~~wholly~~
~~more~~ rain in those Islands in ~~one~~
~~year~~ than in any other of ~~any~~
-try in Europe - or perhaps in the
world. — tho' less than in the US —

Let us next attend to the effects
of Cold upon the human body. V

Cold is a negative quality. It exists
only from the abstraction of heat.
It has been supposed to act as a stimulus
upon the body, but this opinion
has arisen only from an ignorance of
that law in the animal Economy,
that the abstraction of ^{the} stimulus
of heat by
increasing the excitability of the
system renders it liable to be acted
upon with more force by other



stimuli, and hence the vigor im-
 -parted to the system by these stimuli
 has been erroneously ascribed to
 the cold. The universal action of
 cold on the system is as a sedative.

This I infer ^{1st} from the general
 debility which follows the action
 of cold on the system. Labourers &
 travellers both bear witness to the truth
 of this observation in the winter season.
 2 from the weakness - slowness - ~~or~~ ^{and}
 absence of pulse [&] from the sleepiness
 and death which follow cold.

The pulse of a greenlander is generally
 beats but soft & slow in a minute. all

these phenomena certainly indicate
 the sedative operation of cold upon



the system & from the effects of cold
in certain diseases being so exactly
analogous to the effects of certain
oxidative medicines such as bleeding -
purging - and low diet. - ~~They all~~ ^{It} ~~also~~
also by inducing ^{the} ~~debility~~ debility of Abstraction.
has often been demonstrated in in-
flam^y fevers - small pox - ^{tonic} mania
& many other diseases of too much
action. -

I know it may be said here in
favor of the stimulating power of cold
that when we feel much debilitated by
heat in summer, a sudden change
in the air to a cooler temperature
carries off that debility. Does not the
cool air here act by bracing the



body? - I answer - no, - To understand
 the meaning of this phenomenon, read
 - But what was said of the effects of heat.
 - It always produces ~~indirect debility~~ ^{when in excess depression}
 by its excess. Let us suppose healthy
 excitement to depend upon 75° of
 heat according to Fahrenheit's Scale. now
 supposing the F should rise to 95° or 100° ,
~~indirect debility~~ ^{depression} would immediately
 be brought on in this ^{State} of the System,
 let cool air be applied to the body suf-
 -ficient to abstract the 20 or 25°
 of ^{heat} which we have been added to the
 75° , the body will immediately re-
 -turn to its healthy point of excite-
 -ment, in consequence of which





^{raised}
 it ~~removed~~ by ^{stimulus} V.S. ? This depends
 upon those degrees of pain being Abstracted
 which produced the ^{Oppression} indirect debility.
 - Is the system ^{uncommonly weak} so languid that in
 the beginning of a bilious fever, ~~that~~ This frequently
 depends on ^{Oppression} indirect debility. - Is this
 weakness removed by an emetic ?
 This depends upon the Abstraction of
 the stimulus of the bile from the
 Stomach which produced the ^{Oppression} indirect
 debility. - I am disposed to suspect
 sometimes that the weak pulse which occurs
 in the beginning of Palsy & apoplexy,
 is frequently produced in like man-
 -ner by ^{great Oppression} indirect debility, ^{hence} ~~but that~~
 V.S. even in such cases ^{is the} would be

✓ It affects the lungs breast which
very intense with great pain. This
was sensibly felt by the Americans
who went to measure a degree near the
North pole. -

^a most effectual remedies to remove
^{It acts} it by abstracting excess of stimulus;
~~than the usual stimulating remedies~~
~~which are prescribed in that state~~
~~of the system. I have heard of Dr. Williams~~
~~once saved a patient in an apoplexy~~
~~who had this weak & slow pulse by~~
~~taking from him 100 of blood. The~~
~~in these cases~~
~~pulse sometimes descends to 40 strokes~~
~~in a minute, & is again so weak as~~
~~scarcely to be perceptible. —~~
~~I shall now proceed to mention~~
~~the ^{positive} effects of cold upon different parts~~
~~of the system.~~

1 On the Arterial system it produces
 debility and irritability. ^{while it} ~~It appears~~
~~I weaken the moving fibres,~~
~~increase to increase the~~ it seems
 to increase the cohesion of the simple
 fibres of the body. ~~It disposes to all~~
~~kind of fever, even Intermitting,~~

2
V This argument ^{be} to be true, should ~~be~~
reciprocal in its influence upon the master
as well as the slave, for the effects of cold
are the same upon the wills of each of them.

+ a stimulating power in cold, but this
is not the case. The pain is ~~the~~ effect of
the ~~as~~ reaction of the system to such a
degree as to produce morbid excitement in
the part affected. In some instances the heat
of the body ^{repels} ~~is attracted~~ to the cold part th;
so much force in order to equalize itself
that it becomes the cause of that morbid
excitement & pain. It even produces infl-
ammation in some cases. ~~By~~ By

2 It produces Languor & indispotion
to motion in the ~~muscles~~ organs of vo-
luntary motion, - hence some writers
have said that the inhabitants of
cold countries ~~that~~ like those of warm,
were made to be slaves. - having no
wills to ~~move~~ ^{stimulate} themselves to exercise, they
say that they should be stimulated
into action by the wills of ^{a master.} ~~the~~ people.

3 It ~~dulls sensation~~ ^{affects} the nervous
system, ~~but~~ when very intense, it ~~produces~~ ^{with}
~~a~~ pain, in the ~~head~~ ^{whether excited in the head or limbs} - Sleepiness &
death. - This Pain has been ascribed to +

4 It invigorates the appetite, especially
for animal food. Horses eat more
in cold than in warm weather. The
stimulus of blunnet serves to

the long application of cold, sensibility is
so far destroyed that wounds upon the
soles of the feet from broken glass ex-
cite no pain. This has been noticed
by Meade in his travels to the north
extremity of our country.

✓ Hence it is said to be stimulating - but
the stimulus is from other causes to
obviate its debility. It frequently
increases the secretion & flow of
urine - hence Dr. Denbarn's
mode of using it. —

counteract the debility induced by the cold. It even ~~creates~~ awakens appetite in the middle of the night - in hot climates.

5 It weakens the Universal Appetite. Perhaps this Languor in this Appetite may arise from the reflection of the difficulty of ^{supporting} ~~subsisting~~ children in a country where provisions are less abundant than in warm countries.

6 It renders sweating difficult, and uncommon, but when so moderate as to prompt to exercise - it promotes insensible perspiration. It produces a dark color in the skin.

7 It is unfavourable to vision, but this is probably owing to its being generally accompanied with ^{the} reflections of the rays of light from the snow.

8 Cold debilitates the functions of

9 v It is said to ~~dispose~~ produce the
Scurvy. This ^{disease} depends partly on
weak solids, & partly on vitiated
fluids. If the want of sufficient
exercise may weaken the solids, &
an undue proportion of animal
food may induce a morbid acrimony
in the fluids - But other causes to be
named hereafter must cooperate w:
cold to produce the Scurvy. + [go to x, p 66
& proceed to ~~ps~~ ps: 68.]

+ 10 ^{cold} There remains, one ~~more~~ ^{other} effect
of cold upon the body to be men-
tioned in this place, & that is, ~~the~~ ^{when used beyond}
that degree which induces palsies, ~~by~~ ^{by} contracting ~~the~~
the vessels; ~~it~~ it produces a

the mind, but this is probably owing to the languor it imposes on the body. v

= These are the ordinary effects of cold. But when it is ~~pre~~ ^{preceded} ~~by~~ ^{the} ~~heat~~ ^{intercepted} it ~~generally~~ ^{generally} ~~becomes~~ ^{becomes} heat of summer ~~always~~ ^{always} ~~pre~~ ^{pre} ~~disposes~~ ^{disposes} to a remote cause of inflammation. ~~from~~ - it generally produces a train of bilious & febrile diseases. - I have twice seen several hundred people indisposed in our city from ~~the~~ ^{the} cold ~~night~~ ^{weather} coming on in a single night in the month of August. The difference in the Thermom^r in a few hours was from 20° to 30° : - The ~~pre~~ ^{pre} ~~heat~~ ^{heat} Now shall we account for the cold acting so differently here from what it does in

redness in the skin. This is the
effect of such a deadness induced in
the cutaneous vessels by the cold, that
the blood rushes into them and
forms ~~these~~ effusions similar to
those which precede gangrene, or
petechiae in ^{hence persons are pale - then red - then blue to cold.} ~~in many parts of the~~ ^{the} ~~body~~ ^{color.}
~~that drinking & other things the same effect.~~
Cold in its higher degree produces
gangrene, or in other words total disorga-
nization. ~~0 see below~~ ~~go to p. 56~~ ~~see to 56~~

Nothing more happens here that
what he owns is a ~~state~~ when direct
debility is induced by the sudden
abstraction of any other stimulus.
Eg: - loss of blood - the same
quantity abstracted gradually produces
neither convulsion or syncope.

12 ~~Little~~ cold reduces not only the
size of plants but of animals - These animals
are seldom more than 4 feet high. 13 Old
trees bleed from cold. I shall conclude this head

the native of a hot climate who visits a cold one? - I answer, that the duration of previous heat, being only for a single summer, is too short to produce insensibility in the sentient extremities of the nerves, - on the contrary it rather produces a protracted sensibility - and some tone ^{ch} tone - natural excitability - which is easily ab-
-tracted by the sudden action of the cold, the loss of that degree of - hence ~~uncommon~~ debility which is succeeded by ~~attended with~~ pain - & hence a fever from the slightest irritating cause such as motion - or perhaps even thinking afterwards. ✓ Much is ascribed in these cases to a sudden obstruction of the

~~It may have some~~
~~perspiration. It is probable that it has its effect,~~
~~but it is not a consequence of the cold.~~
Perhaps its action ^{on} the pores may be

the existing cause of the fever, - or perhaps the cold acts only by destroying the ^{regul} ~~regul~~ ^{ing} ~~ing~~ of the system.

~~more Disease, & more~~
 by remembering that there is ~~probably~~ ^{more} Animal
~~& more Disease~~ suffering from cold, than from any other
 evil that afflicts the world. ~~The~~ ^{whole brute} ~~cold~~ ^{creation}
~~groans with many~~ ^{animal creation} under its effects upon
 sensation, health & life. Who can calculate
 the sufferings of Sailors, Soldiers & the labouring poor
 from cold out of doors and from the want of fuel &
 clothing within doors? But - the sufferings of Animal +

✓ Pontoppidan gives us the same
Account of the ^{influence of the} climate of Norway
upon the human body, He says: +
inflammatory fevers are uncommon there
in the winter. - The month of Dec^r
1798 very cold & very healthy.

+ nature do not end here, ^{the whole} ~~the whole~~ ^{perhaps} ~~perhaps~~ ^{many thousands} ~~many thousands~~ ^{perhaps millions} ~~perhaps millions~~ ^{of} ~~of~~ ^{insults} ~~insults~~ ^{die of its cold every year} ~~die of its cold every year~~ ^{& Birds} ~~& Birds~~ ^{may} ~~may~~ ^{the whole brute creation} ~~the whole brute creation ^{under} ~~under~~ ^{in cold climates, grows with man} ~~in cold climates, grows with man~~ ^{its} ~~its ^{painful effects upon sensation, health} ~~painful effects upon sensation, health ^{and life.} ~~and life.~~ ^{The diseases from cold are more} ~~The diseases from cold are more~~~~~~~~

Nov 58.

Weather uniformly cold is generally healthy. The most healthy winter I have known in Philadelphia have been the coldest. I first observed this in the year of 64, ^{when a student of medicine} and have witnessed it twice since. Diseases of all kinds ^{looked up} are ~~seen~~ as it were ^{known} in Canada during the winter, unless once in many years when the air is thawed by a visit of warm weather. Dr. Guthrie speaks in high terms of the health & pleasure which reign in Russia during the winter. Even the Catarrh (the constant attendant of our variable winters) is unknown during the cold weather of that northern country. The return of Spring ^{in these cold countries} generally produces fevers

numerous, than from any other cause.
It is ~~more~~ at times a remote - ~~and~~
predisposing - or an existing cause of
nearly all fevers, and however strange
it may sound it is more so in warm
than in cold climates. The night air
in the Sea Egypt - and the East & West
Indies awakens into action the mias-
-mata which produce nearly all the
plagues - & yellow fevers & liver com-
-plaints of those Countries. In short
there exists not a greater enemy to
the health & life of man than cold.
go to p 66 #

but these fevers are of a peculiar
 kind. They are ^{unlike the common} ~~by no means~~ in
 flame: ~~the~~ fevers of middle lati-
 tudes, and in many seasons they
 rapidly ^{infect} ~~those~~ gangrenous
 and of a putrid nature. ~~How~~
 shall we account for this? I an-
 swer, that the arteries by being
 long under the pressure of the sedative
 action of cold, lose that elasticity,
 and excitability ^{ch} which is the foundation
 of inflammatory action, and which is
 left apt to be destroyed or suspended
 in ~~minutes~~ ^{minutes} where the action of the
 cold is of a more transitory nature.
 In the diseases of cold climates, as
 well as warm, we see are generated

V You will please to mark here
the difference between the short &
long application of

V - Hence we find the inhabitants
of Hindland & of other cold countries bear
the heat of a Vapor bath at ^{not} nearly 200°
without feeling any painful sensations
from it, and

H The relative effects of cold are fur-
ther evinced by certain animals perish-
ing in a degree of cold in the fall,
which revives them in the Spring. In
the former season the excitability of their
systems is exhausted by the previous heat
of summer - in the latter it is accumu-
lated by the previous cold of winter. &
marked ^{generally that} the body suffers much less in passing from
extreme heat to cold, than from extreme cold to heat.

60

in one season, & brought forth in
another. ~~+~~ **H**

Cold produces

~~If~~ ^o ~~sachata~~ after a while the
same insensibility to heat, that it
does to itself. ^{see opposite to p 55.} Hence we find the Na-
tives of Europe bear the heat of the
West Indies much better than the
Natives of the Islands. This insensibi-
lity to heat, is only to be acquired by
the long action of cold, alternated
with little heat, on the system. In
a Climate like ours, we lose the
insensibility to cold contracted by a
single winter, by each succeeding
Summer. The man therefore who
attempts to fortify himself against

To Do.

1= This was exemplified in the Experiment
made by Dr Hodge & Dr Bladen ~~who were~~
formerly mentioned, who tho' they felt the
cold very sensibly after coming out of their
heated room, were not ~~at~~ indisposed from
it. Akerbi tells us ~~that~~ in travelling thro'
Swedish Finland, he often saw persons
come suddenly out of a vapor bath heated
to nearly 200, and stand half an hour
almost naked in the open air when the
ground was covered with snow, & the ~~Blad~~
0, without feeling the least inconvenience
from the cold. - 6



✓ You will please to mark here
the difference between the short and
long application of heat & cold to
the body, ~~the~~ when succeeded by each other.

Cold succeeding the application of heat to
the body for a short time, produces fever
coleras ^{tetanus} &c - But when it succeeds the

long application of ^{heat} it - it produces scarcely
any effects on the body, & is less visible
than in other circumstances of the
system. ^{from causes formerly mentioned, viz exposure} Again - heat succeeding the short
application of cold, produces inflam:
fever - but when it succeeds the applica:
tion of cold for 5 or 6 months it

produces fever of a ^{chronic} ~~venous~~ or
^{gangrenous} ~~putrid~~ type. ~~It would seem as if~~
indirect and direct putridity were
alike destroyed by the long continuance

the cold by ^{light} ~~thin~~ clothing, will
have his work to begin & do over
again every winter. If he ^{should} acquire
his long sought for insensibility ^{to} it
cold, it will be in the same way that
a farmer taught his horse to live
without eating. As soon as the poor
beast became perfectly inured to his
new discipline, - he died. ✓

The numerous & morbid effects
of cold ~~like those of heat~~ are not
necessarily connected with a vicinity
to the poles. On the contrary - health
and long life appear to be as com-
mon in cold countries as in
warmer, where men live agreeably
to reason. ~~At~~ where life is contracted,

of debility / = supposes that more
people perish from the morbid
effects of Cold succeding to heat, than
from the plague. This opinion is supported
by many other Authorities. Dr Boerhaave says
"however paradoxical it may appear Cold
is the Cause of almost all the diseases of
hot climates, to which alone Climate is
ascribable." p. 71. He adds further as a rea-
=son for this, that every person being weak
from heat is under a pre-disposition to
Disease from cold.

Sir Wm Gampel says it must not
 be ascribed to cold, but to the excessive
 Use of those stimuli such as Ardent
 Spirits, - Animal food - & dancing,
 which are all used to counteract it.
 - In ~~the~~ ^{the} ~~land~~ where winters are ^{long} ~~short~~
~~and~~ ^{and} very ~~much~~ cold, ^{being} there are in
 many countries, such provisions
 made against it as that it becomes
 the pleasantest season in the year.
~~There is~~ Thick walls, - double windows
 - and stoves ~~as~~ at home - and
 furs and footstoves ^{in the open air,} ~~also~~ afford an
 ample protection from the cold in
 Canada and Russia. This is so much
 the case, that Dr. Genthie tells us
 that the Russians complain ^{very much} ~~of~~

V In that country the effects of cold
are obviated by stoves which pervade by
means of pipes every room in the house -
- by double glass windows - and by being
enveloped in ^{mantles} fur, when they exposed
themselves to the air.

of the difference between a winter
 spent in the Southern parts of Europe
 and in ^{their} own country. I once
 heard a ^{New York} lady who had passed a winter
 in Canada say that she had never
 felt so little cold in a winter in her
 life before. From these facts it would
 appear, that cold produces diseases in
 northern countries, chiefly where they
 do not conform to the weather in
 the structure of their houses, ^{in the} application of fuel in
 their dress or manner of living, &
 that ^{cold} it is most injurious when it is
 alternated with heat, or combined
 with moisture. Hence we find the
 most acute inflamed diseases produc-
 -ed by it in middle latitudes. It is
 difficult to say in what latitude, it



produces these diseases in the greatest
 number & most acute degree, for
 a comparison will be just only
 when it is made between a people in the
 same states of Society. — In Britain
 the variable Climate of Britain we
 should expect to find them ~~very~~ ^{most}
 most frequently, but luxury — and
 effemacy have nearly banished very
 blood from that Country. Influen-
 zers are as yet very acute in some
 exhumia, ~~therefore~~ our Citizens are
 in the same state of Society that the
 people of England were in Dr.
 Sydenham's time, when Bleeding
 small beer, & cool air cured nearly
 all their Diseases. If our fellow



citizens on the Potomac, & even
 in the States beyond it, do not bear
 bleeding as plentifully as we do. If
 we are disposed to ascribe it to their more
 indolent and luxurious mode of living,
 for in more southern climates the
 free use of the
 lancet is the only remedy for the
 diseases of cool weather. Dr Hennen
 seldom drew less than ^{from 316 to} 320 of blood in
 a pleurisy in Jamaica. Dr Guise
 says that nothing but copious bl.
 cured the pleurisies of ^{the negroes in} Jamaica when
 in those cases where the pulse was
 scarcely perceptible, & Dr Hennen informed
 me that after a north west wind,
 the ^{pleurisy} diseases in ^{fevers of} Point required as
 plentiful bleeding as the diseases of

V The climate therefore of middle latitudes is not necessarily unhealthy. - Even the frequent changes according to Dr Huxham may be considered salutary. It only requires more care & the exercise of more reason to enjoy health in such latitudes than in less variable climates.

Dr Sydenham's remark - nearly all fairs from neglect &c in beds: -

+ too a man died in cold at 81. or 90° below 0 - when asleep - who lives when awake & in action ^{in a degree} where the cold is at 30° below 0.

this Country -

The effects of the sudden transitions of the air from heat to cold, & cold to heat on the body, do not necessarily produce diseases. They may be prevented by ^{a careful} ~~such degrees~~ of caution in accommodations of our dress and bed cloaths to the changes in the weather. This is more necessary in ~~from~~ the Spring - Summer, & Autumn than in Winter. I have known many thousand people indisposed ^{with fevers} from wearing too thin cloaths or sleeping under too few bed cloaths, but never one person ^{go on to + p: 68} from ~~wearing~~ ^{an excess} in either of those articles.

& The cold acts ^{more} ~~most~~ powerfully on the system in the sleeping, than in the waking state. Hence ^{the foundation of} nine out of 10 fevers is laid in the night, & hence



Cold acts more powerfully upon the body when ~~scarcely~~ ^{the} stomach is empty than when it is full of Aliment - Hence famine and frost frequently go together in sailors who suffer from the snow.

Old people suffer more from the cold than persons in middle life. Hence the reason why they are so often found paralytic, or dead in their beds in very cold spells of weather.

Cold acts powerfully upon persons addicted to the use of spirituous liquors.

Hence the reason why they often ^{too well} yield ~~the~~ ^{the} bills of mortality in the winter ~~their lives to a cold night or~~

months. Three notorious drunkards

have died in our city in the course of the last ^{Feb in the winter of} ~~year~~ 1791-2 ^{two of them} during the coldest week in ~~last~~

v fact of Lake Superior by 3 - never
frees - vapor - frees in the air & cuts
the base. See p: 88. of 4th Ann: plumb.

~~some the 1st Jan: 1792~~, & all with
great Diseases ^{originating from} of great debility. Dumb-
bards are generally chilly, when not under the
Chill even ~~proceeds from the vigor of~~
~~the vigor of strong drink.~~
~~the stimulus strong~~ Cold acts but
feebly upon Children, from the Vigor
of their stimuli. I have heard of an
Indian woman being found frozen
to death ~~but~~ with a living Child on
her back. — return to — p: 36. —

+ Moisture increases the sedative
effects of Cold by conveying off more
of the heat of the body. ~~The~~ The Cold of
Great Britain at 30th is much more
disagreeable than the Cold of Pennsylv-
vania at 10th. The Russian sailors
who spent part of the winter of 1779
at ~~Rhine~~ Portsmouth declared that

‡ The Air of Holland owes its unhealthy quality to its moisture. This is so great in the evening & at night as to make the Dregs of winter necessary in midsummer. - Dr Franklin denies that we take cold from moisture even from sleeping in wet sheets - but this is contrary to ^{reason} ~~all~~ ^{any} observations. (C)

✓ The cold hand of a physician will often produce a short rigor in the whole body of a patient, & I know a gentleman who ~~labours under~~ is subject to a cough, who can excite a fit of coughing at any time in the night only by putting his hand out of bed. Gollymer.

‡ There ^{was lately} is an old man in this city of the name of Godfrey Wiltren who can predict the approach of snow here, that is rain, in the atmosphere by a sickness at his stomach. A similar fact is related by Dr Darwin, ^{many} Birds ~~probably~~ have this sympathy with

moist
the cold of England ⁶⁹ was far more
distressing, & insupportable than the
coldest weather they had ever felt in
Rusia. †

Cold acts more or less certainly,
~~upon the body~~, according as it acts on
the whole or a part of the body, or upon
a part which has been confined from,
or exposed to the action of the Air.
- Cold feet often produce Catarrh - Colic -
and even palsy & Apoplexy. & A current
of Air against the back often produces
tumor & stiffness & inflammⁿ. in that
part of the body, and ^{or in other words a trismus} ~~there is~~ a
or spastic tetanus.
young woman who caught cold only
by leaving off a ribbon which she
much ^{Misses} takes cold by wearing short Skirts -
usually wore on her caps. The Abstraction
of Stimulus in a part, cold in these

~~I told inducing gangrene on the
limbs. How? - the perverted - accom-
-modated to adaptability I.~~

~~approaching rain - hence the peculiar
& motions
Noises they utter before it comes. Ducks
seldom fail to indicate wet weather by
rising from the ground & clapping their
Wings. This sympathy natural to birds
is acquired in many Chronic Diseases to
all the changes in the weather in the
human Species. It is a kind of ~~superadded~~
sense. ~~go to p 71. 0~~ In health we have a
sensation of an approaching fall of snow.
- Hence the common saying - "It feels like
snow" go to p 71. 0~~

cases, excites the action of other humors
to restore the equilibrium of γ system.
The fever is the effect of too much
action for ~~this~~ purpose. It is from
having so often seen the ill effects of cold
feet - that I seldom give my advice
in a chronic disease, that ~~do not~~ without
charging my patients to keep their
feet ^{the extremities of} warm - for by the feet & the mouth,
I believe we receive 9 out of 10 of all
the diseases to which the human body
is exposed. ~~§~~

How far have we viewed the effects
of heat and cold, in their simple ^{states} ~~as~~,
and combined with moisture.

~~Cold~~ The same degree of cold are
more sensibly felt in windy than
in calm weather - owing to the

positive & relative
✓ The effects of heat and cold are very dif-
ferent in sickness from health, & vary
according to the stages & states of diseases. of
this hereafter. ~~turn back to~~ they not
only suffer from their presence, but
they have a premonition of their approach.
turn back to p. 69 #

U Thus in the winter they dispose to
diseases of the head - in the Spring to ^{diseases} the
lungs, and in the summer & autumn to
the alimentary canal. ^{The actions} ~~the persons have~~
of the seasons on ^{health &} ~~human~~ life has been
compared to the different stages of human
life. ~~winter is~~ The winter has been compared
to the infancy - Spring to youth - summer
to manhood - & autumn to old age.
It is remarkable the diseases produced by
each, are the diseases of those 4 stages of life.

Wind carrying off the insens heat of
 the body discharged with the insen-
 -sible perspiration. I think I have
 oftener known Catarrhs & other in-
 -flam^d affections induced by windy
 than calm cold weather. — V

0 Thus far have we examined the
 effects of ~~heat & cold~~ ^{the air} upon the body,
 as far as they relate to their sensible
 qualities. But they both act differently
 in different seasons. ^u Again heat & cold
 act differently in
 different months in all middle
 latitudes. — They act differently in
 towns & countries — in cultivated
 & uncultivated countries, but this de-
 -pends ^{in part} on the combination of the
 air with certain ~~islands~~ ^{circumstances} ~~circumstances~~
 latitudes

V. Bring in birds from all quarters in
Diff. Countries & their influence on health next
year.

20th Dec 1871

It therefore will come in ^{under} our next
 head. I shall only mention the effects
 of the sensible ^{qualities} effects of the air in
 different ^{seasons &} months. In ~~some~~ one of
 the seasons, the air is rendered ^{unhealthy} ~~more~~
 by mixture wth exhalations. This shall
 be mentioned in its proper place.

☉ To exhibit the influence of seasons
 and months in a climate nearly similar
 to our own, I shall furnish you wth
 an extract of a Journal of the deaths
 in the Parish of St Nicolas in Boulogne
 on the ^{in the lat. of 50°} sea between the years 1776 and
 the year 1783. It is taken from D^r Daiguan's
 tables of the variety of human life - a
 curious & interesting work lately put
 into my hands by Mr Jefferson ^{Dying his residence is this city.} I shall
 first give the amount of all the deaths

... ..
✓ The same taken notice of by Dr
Heberden Jun^r in London. in his work.

in each of the seasons that ~~were~~ are
included in the above mentioned seven
years. In ~~seven~~ the winters 365 - In the
~~spring~~ ^{Spring} 292 - In the summers 277. -

In the Autumn 357. - in all 1291. -

you see here the ^{2nd degree of} greatest mortality is
in the Autumn - owing, probably to the
combination of the Air with morbid
exhalations. I have observed the same
^{degree} ~~excess~~ in the mortality in our city in
the Autumn - and from ^{the} ~~this~~ mixture
of morbid effluvia with the Air. - The
next season ^{which there was the greatest} ~~is~~ the number of Deaths is
the winter. ^v This is unlike our Climate

in ordinary years. I suspect some epidemic
~~from contagion~~ must have cooperated with

the cold in some of the above winters.
- The Influenza - the Measles - and



74
the ^{malignant} ~~pestilence~~ foretold which prevail
frequently in winter, often swell our
bills of mortality in that season far
above any other season of the year, but
all these act independant of the season-
able qualities of the Air. —

The Spring & Summer are gene-
rally the most healthy seasons in
all climates between 50° and 35° —
of latitude.
It is remarkably the case in Pennsylv-
ania. —

~~Therefore~~ I shall next mention the
influence of every month in the year
upon human life, taken from the
same register of the parish of St. Nicolas
by Dr Daignan. —

In January there died in the course
of seven years 142 persons, of whom



From a review of the influence of the Wea-
 -ther in each of these months, it appears
 that the most sickly of them was Jan.
 - This is not common in the middle
 states except from Epidemics - or except
 in open winters. The principal mortality
 in this month when intensely cold
 is among old people and persons previ-
 -ously debilitated by Ardent Spirits. -
Feb. and March appear to have been
 very sickly, nor did the mortality abate
 much in April. ~~These~~ The weather in
 these months is very variable, and
 often proves fatal to Chronic patients
 especially to persons afflicted with
 the Consumptions. The inflam^d dis-
 -eases produced in these months

V Hippocrates expresses the same
idea in other words. He says that
the diseases of winter are seldom
cured till midsummer, & the disca-
ses of summer are seldom cured
before the middle of winter. Van.

~~An important observation!~~ - ^{Dr. Keil} says
the ~~best~~ the time in w: ^{the} venereal fever sh^d.
begin is at the vernal & autumnal equinoxes,
but that they are antedated, & ~~postposed~~ ^{postposed} by
the weather - hence the ^{sometimes} former appears in Feb:
& the latter early in Sep: - They are according to

seldom prove fatal in our climate.

June and July are the most healthy months in the year. The same observation applies to the climate of Penn-

sylvania. ^{The latter} ~~July~~ end of July is sometimes fatal to children - but

I have uniformly observed June to be the healthiest month in ^{in this city.} the year.

The ~~same~~ Dr. Sydenham says that the diseases of winter spend themselves in June - and the diseases of summer in February. I believe there is a foundation for ^{the same remark} ~~this~~ remark in ^{the middle} ~~many~~ of

Notes of America. ^{over} ~~disposition~~

- Most of fevers bear bleeding in May, and most of ~~them~~ the fevers of ~~december~~ Decem^r. Jan^r. and Feb. exhibit marks of the ~~emitting~~ ^{emitting} & inter-

Pigeot most frequently antedated. Hence he
says a medical Spring should begin on the
12th of Feb: Summer on the 12th of May. Autumn
on the 12th of August, and Winter on the 12th
of November. —

fevers more especially in discharges of bile. Now - according to this remark
^{breathings of the}
 the month of June may be ascribed
 to a kind of solstice in diseases. - They
 seem to pause for a few weeks - but it is
 only to ^{it} change one set of destroying ~~in-~~
~~struments~~ ^{weapons} for another. -

The month of ~~Sept~~ August is more sickly
 by our table than July - 85 - The
 proportion of deaths in that month
 is much greater in our city.

The months of Septem^r - Octob^r and
 Novem^r are next to in ^{their} fatality mortal-
 ity to the winter months. This is
 probably owing in part to exhal-
 -lations, but much of it may be as-
 cribed to the contrast between the

V This air by its coldness & dampness
~~renders~~ renders riding in the night much
more fatiguing than in the day time,
for they both produce great direct debility.
Mr Bruce speaks of the Damp Night Air
After a hot day affecting even the mind,
for he says the Sailors who conducted
him up the Nile, always discovered strong
marks of cowardice as soon as the chilling
night air began to act on their bodies.

Colds are more frequently taken by ex-
posure to the night air than in any
other way. In Spain it is often caught
by serenading. Hence says Brydone it
is gallant to make love in that country
only in a hoarse voice. — The yellow
fever is oftener excited by the night air
than by any other cause —

day & warm air of the day, & the cold
 and moist air of the night. — The
 sickly and mortal season begins in
 Pennsylvania about the 20th of
 August. It is partly occasioned by
 exhalations, but chiefly by the damp
 evening air to which our citizens
 expose themselves in their summer
 dresses. The quantity of dew which
 falls after this time is so great as
 to resemble ~~the~~ a gentle rain. It fre-
 -quently sets springs which have
 been dried up for six weeks a flow-
 -ing. — This ^{richness &c.} vivacity generally
 continues till the frosty ^{nights} come on,
 Unless heavy rains should fall in
 the mean while, ^{for} they both alike

~~V The evening air is from~~

V ~~The~~ Under the head of the sensible
qualities of the air I mentioned its
rarity & density.

Air highly rarefied such as exists on the
summit of ^{very} high mountains ~~is~~ ^{produces}
~~many~~ ^{disordering} symptoms. It such as

great muscular weakness. ^{hence} ~~This~~ persons
in ascending them near their summits are
often obliged to stop in order to rest. ~~Now~~ ^{This}

~~the~~ ^{muscles} has often been felt on the
Alps. Even the mules which ascended them

were affected with a similar immobility
of their limbs with men, and with great
difficulty of breathing - panting, & the

emission of plaintive cries. Saussure
~~says in~~ ^{walking on the summit of} Mount Blanc in
Switzerland that he could not advance
15 or 16 steps without stopping to take

check Bilious diseases, - thus and both
in the same way by destroying morbid
exhalations. ~~†~~

The table which I have read to you
will furnish some very useful remarks
on the influence of the ~~see~~ remote causes
of diseases on persons of different ages,
and conditions, but this will come
in the place marked for it in our 14th
-labour. ~~Q~~ go to n^o 3 new copy p. 1.

Q we come now to speak of differ^t
impregnations of the Air as remote
causes of diseases. ~~and~~
~~or kind~~ miasmatic exhalations.

1 of marsh effluvia These are a
fruitful source of diseases. ~~Two~~ ^{Three} circum-
stances are necessary to produce them
viz heat and moisture, ~~The heat to~~
the ~~vegetable & animal substances.~~ ^{vegetable & animal} ~~substances.~~ ^{so} and

breath, the $\frac{1}{2}$ at this time in the Barometer
stood at 12 inches. ~~Other~~ ^{Other} effects of these great
altitudes ~~are~~ ^{are} a quickness of pulse - palpitation
of the heart - sickness of the stomach - loss
- thing of food - ~~on~~ ^{propensity} ~~conscious~~ ^{to} great thirst, ~~but~~
have an aversion to spirituous liquors. All these
effects of breathing this rare atmosphere go

& nor was there as yet any quantity
of vegetable matter on the ground to
putrefy, & mix ^{to} with the animal matters.

+ off after resting a few minutes, but
return with the least exertion. ~~all~~ These
~~symptoms~~ have been attributed to a
deficiency of oxygen in the upper regions of the
air, and a ^{most rapid} consumption of it ~~beyond the~~
~~proportion~~ the combustible matter in the
blood - such as I said formerly constituted
the ^{impure} air discharged by Respiration. In
addition to the effects above mentioned,
I ~~now~~ ^{takes notice of} two others viz
Sickness & great pain from the action

continued for some time. I said that
 moisture must be combined with this
 heat, for the sake of the peneshae
 nothing unwholesome from the dry
 ground, nor from marshy ground when
 it is ^{completely} covered with ^{the same with 10 leagues in} a bed of water of
^{Egypt.}
 To show that heat is ^{essential} to
 the production of miasmata, I
 shall relate the following fact. Some years
 ago the meadows below this city were
^{in the month of April} overflowed, and many animals as well
 as fish were left dead on the meadows
 after the recede of the river. In vain was
 Sickness looked for after it - for still
 yet there was not heat eno to pu-
 rify these animal matters, or to ex-
 hale them in the air. This fact was

of the Rays of the Sun shining Directly upon
the skin. +

~~in its changes from different degrees
of Density & rarity
creates great changes in the body, except it
sometimes disorders the body. Invalids
are most sensible of it. Mulcaill a French
writer ascribes a number of sudden Deaths
which occurred at Phiviers in 1747 to a
diminution in the height of the Air. Old
the & it fell suddenly from 28 to 25.8 inches - each
the & the boys fell suddenly from 28 to 26.8
with a diminution of 1000 pounds of Air. Old.
that is one such Pours & Rheumatic pains
are often made worse by a sudden diminu-
-tion of its weight. -~~

+ In Baron Humbolt who ascended to the
Summit of the Lembarallo, the high a mountain
-tain 20,000 feet above the level of the ocean, ^{in S. America}
of Course the highest mountain in the world,
the rarity of the Air produced he informed ^{me}
he vomited from his ^{nose} mouth & lips, a
red ^{ness} of his eyes, Achne at his stomach,
& a pain in his breast which continued

Once proposed to me by the late Dr. Bond, but without the explanation I have given of it. ^{Some} ~~about~~ ^{five} years ago, a similar frost happened in those meadows in the month of May or June. From the full operation of heat at that time, I guided by the event of the inundation in April ^{just mentioned} I ventured to predict that no extraordinary fish-
-crop would follow, and the issue was agreeable to this opinion. many facts might be mentioned ~~to~~ to prove that exhalations ^{fluidity} from fluid bodies of water do not produce diseases. Mr. Bruce ~~in~~ remarks in his travels that rainy seasons w^h perfectly covered the low grounds were never unhealthy in one of the sickly

V & Dazilles in his Account of the
diseases of the negroes remarks that
at Cayenne when ^{there is much rain &} the morasses are
deeply overflowed, the people are most
healthy - But at St Domingo it is the
reverse - When there is much rain,
and no morasses ^{to} overflowed p: 107

— several Days afterwards. His pulse
of Cold was very great, altho' the ♀ was
between 40 & 50 of Fahrenheit. By his
Indication the quantity of Oxygen was
reduced to 19 parts in the 100. Part of
the fineness & softness of the frog. ^{back to p 82. 0}

~~In Women the variations of
Baromet. in Fowles & manely
the last p 30.~~

~~An excessive in Density, [that is above 28] by
compressing the lungs renders the reflux of the~~

Countries which he visited. In the Delaware state heavy rains by overflowing the low grounds have in one instance presented a sickly fall. In the same season bilious fevers were common in the high grounds of Pennsylvania - for here the rain was only sufficient to produce malarial fevers on the low grounds, but little in 1804. ^{These fevers on the low grounds are called malarial, but these are general on high grounds in humid states.} The sicknesses of autumn are frequent. The same in 1806 - great rains & danger to the states & healthy, - by depend on very slender circumstances, which if lightly attended to, lead to a conclusion that there ^{are} no fixed principles with respect to the generation and action of morbid ^{miasmata} ~~contaminations~~. A summer ^{which} perfectly dries the low grounds & on perfectly covers them with water will generally be healthy. Superficial observations ^{do not} who consider heat & rain as

V I have said that heavy rains
which cover the ground with
water prevent exhalation, but
I have mentioned a case in which a
my 4th vol. of Inquiries
heavy rain promoted exhalation,
i.e. by destroying the green covering
which had covered a pond of stagnating
water. ~~water~~ ^{N.B. Humboldt mentions that}

Rain on the west coast of Africa induced fever - perhaps
from some cause. ^{from some cause.} (84)
It is remarkable that in
close swamps where there is no
exhalation, there are no bilious
or intestinal fevers. The access of the
sun to these swamps is necessary
to their producing disease.

It is most hurtful where salt and
fresh water mix in the southern states.
millicut.

under relative circumstances, 84

~~generally without effect~~, would be led
from this to doubt the efficacy of both
in producing diseases, and to ascribe
them to ~~they know not what~~, ~~they know not what~~
~~quality in the air~~, ~~as to the fruits of~~
~~origin, in the air~~, ~~as to the fruits of~~
~~the season~~, ~~they attending to moderate~~
degrees of rain w^{ch} produce moisture, &
those degrees of heat which do not sud-
denly dry the ground, that ~~produce~~ ^{generate} the
effluvia insensate w^{ch} produce bilious
and intermitting fevers. Fresh & salt
water mixed in marshes most apt to produce disease.
= The matters which are exhaled are
of said to be ~~of a~~ ^{formed from} animal & vegetable
matters, but many facts ^{prove} ~~negate~~ it for:
beside that they are chiefly of vegetable
origin. ~~They operate perhaps~~ ^{are often combined}.
but each acts separately, as I shall say directly, go to
matters putrefy in the neighbourhood
of towns without producing a single

disease. Mr Howard tells ^{us} the bodies of
persons who perished with the plague
at Smyrna ^{in one instance} putrefied in the open
air without spreading the disorder. The
stench of these bodies he says passed ^{this} over
the Governor's house in a certain
direction of the wind. Neither human
or any other animal ^{always} faces are un-
friendly to health, - or Edin² & Madrid
would long ago have been depopulated,
^{and} ~~was~~ ^{would} stables have been ^{long ago} removed
from the neighbourhood of our houses.
- but putrid seeds of all kinds produce
fevers. Dr Rogers in his Epidemics of
Cork ^{describes} a fever from a putrid
bed of cabbages. After all ^{there is no} ~~I think it~~
^{doubt} ~~but~~ ^{putrid} animal matters
~~most probable that~~ ⁱⁿ ~~in~~ ^{air} mixed with wind & certain

It is remarkable that in swamps
where there are no exhalations people
work & enjoy good health. -

5 It has a malignant
in Newbury port in 1796 by the effluvia of
putrid fish & putrefying whale once prod.
What is the nature of these ~~malicious~~
an epidemic fever in Holland,

0 miasmata? - From the effects of fires
& burning & in destroying them they
have been supposed to be animated - on
organic bodies. This may be the case, but
it is not very business to decide upon this
question. It is remarkable that mosquitoes
and other insects abound with bilious
fevers. - But later observations have
taught us that in they contain
a large portion of Hydrogen on
which their action depends. -
~~feverish~~ Bilious fevers which
are produced by miasmata.

circumstances produce diseases. ~~For~~

~~Dr Pringle has established it.~~ & turn back to 85-

[On what part of the body do these ~~micro-~~
turn over to p. 87 1st 2nd 3rd
micromata act? On the arterial sys-
tem in which they act as stimulants.

[This stimulus in this case is generally
direct only, in which case a fever of
violent ~~excessive~~ action is induced - when the
stimulus of the micromata exceeds
great. They first
the force of ~~the~~ ~~stimulus~~ produces
interm?

indirect debility - hence bilious fevers
are often ushered in with syncope - &
& apoplexy. Instances
~~some times~~ ~~in these~~ are not want-
ing of these micromata producing
sudden death.

2nd Particularly the brain,
3rd They act on the nervous system
probably this the evidence of the
arterial inducing head act. and

Bilious fevers ^{are} produced by ~~miasma~~ miasmata
are generally accompanied with
Inflamⁿ: or Congestion in the liver,
& wth a preternatural secretion, &
excretion of Bile. Galvani produced
a similar & morbid state of the liver
by injecting Hydrogene into the
Oesophagus of fowles, & afterwards
tying ~~them~~ ^{up the gullet} up untill they died. The
Livers of brute animals which are
killed in the fall when it is bilious
fevers prevail, are generally enlarged,
& sometimes ulcerated, probably
from inhaling the ~~hydrogene~~ ^{gas} of
marsh exhalations.

Ⓢ In mild cases of this disease. They
act by discharging bile from the
Stomach. The miasmata not only adhere
bile into the stomach, but they produce
such an action upon it, as to induce in it
the secretion of the black matter called b: vomit.

convulsions. I have seen many inter-
mittents ushered in by the latter symp-
toms. — creating Sickness & Vomiting.

+ ^{1/2} They act on the stomach ~~deleteriously~~
It is highly important to attend
carefully to probably this the indication
to this, as it furnishes the indication for the use of
of the bile. [2 The liver suffers more or
less from ~~fevers from~~ miasmata.
less in all ~~bilious diseases~~ miasmata.

This I ascribe to a peculiar dispo-
sition in the miasmata to act upon
that viscus, so as to increase the secretion
& excretion, ~~of bile~~ & perhaps to vitiate
the quality of the bile. These facts
disposed to ~~condemne~~ this opinion from
having ^{add weight to} ~~fully adopted~~ the old & exploded
doctrine of ~~bilious~~ specific tinea-
li. The miasmata produce in the
stomach & bowels sickness - Vomiting

✓ cattle, hogs & sheep that feed on low grounds
in the fall, have often large inflamed & ulcerated livers.
✓ Some times the bile is ~~often~~ mixed w.
the blood in these fevers, and produces a

deep yellow tincture on the skin. An
Epidemic of this kind is described by
Dr Haller in his Pathology. I ~~saw~~ ^{saw} it

in the American Army in the
Autumn of 1786. It is totally dif-
ferent from the yellow fever of the
West Indies. It is called febris biliosa-jeteroides

by Sauvage.

Does the ~~same~~ ^{same} miasmata ^{which produce bil. fevers} act on
the bowels so as to produce ^{of} Dysentery?

~~This is a knotty question.~~ I am disposed
to ~~believe~~ ^{answer} ~~that~~ they do, and the two diseases are
produced by the greater or less disposition of
the system to one or other of those ^{uses} disorders,
or by the combination of the miasmata
with more or less cold, or moisture.

& Dysentery, & in the liver pain - and
 inflamⁿ. - The bile is often so ^{vitiates} ~~vicious~~
 in its ^{qualities} ~~as~~ as to excoriate the fauces
 & rectum in escaping upwards or
 downwards - and ~~this~~ after it is dis-
 charged to occasion Syncope by its highly
 offensive smell. V. go to 2^d p 86 @

↳ They ^{are said to} act on the blood in some instances,
 so as to dispose it to a Septic tendency. For

^{Dyscrasia}
 ↳ the ~~disposition~~ of the blood ^{appears to} appears
 in these fevers ^{may} be the effect of the
 violent ~~diminished~~ action of the Arteries on it
 rending & tearing it to pieces. - This expⁿ.
~~of blood deficiency of action takes place~~
 of the cause of discoloured blood, you will find in
 Denham. The action of Virus mata is rendered
 more certain by their ^{being} combined with
 cold or moisture. Hence they affect the
 system most certainly in ^{the} evening

calculations of the
from the same well pond a Dysentery
will be produced on the inhabitants
of the summit, and a bilious or enter-
-mitting fever on the inhabitants of
the declivity of the same hill. On the
summit of the hill, the vias water
are combined with more cold, and
moisture than below it. Mr Bruce tells
us if he often saw the Dysentery and
bilious fever alternate with each other
at Mapual. Dr Sydenham ~~remarks~~
adopts the idea of it being produced by ^{the} ~~one~~
same kind of vias water. He calls it the
Dysentery "*febris Enterovessa*". Dr Kehorn
& Dr Clark of the same ^{Dr Jackson is} opinion.
not only the Dysentery, but the ^{bilious} ~~enter~~ fever
depends upon the same ~~cause~~ ^{cause}

Trinacra under different circum-
stances of weather or constitution.
The feil fever puts on sometimes the
[All the fevers produced by putrid
symptoms of Dysentery. —
vegetable exhalation are at more
or less contagious. — This is evident
from the authorities of both the kinds,
Dr Cleghorn — Dr Clarke — Dr Rodgers —
Dr Zimmerman — &c. &c. &c. &c. &c.
in short from all the writers on
Epidemics, & I have ever met with
it. Innumerable proofs of it have
occurred in our country, & many
others your own observation, nor ~~was~~^{was}
~~the~~^{are} ~~these~~^{the} facts ^{which prove} ever called in ques-
tion by body, but by the College of
Philadelphia the Professor of the ~~theory~~^{practice} of
Physic in the University of Pennsylvania
who tho' he ~~has~~^{applied} taught it, and I am
satisfied does not believe himself. X

fevers more than Cotton or Woolen,
 Attho' the latter are supposed to retain
 it longer. The fevers of the Campaign
 1795 were ascribed in part to the
 use of the rifle shirt which was uni-
 -versally worn by the Southern troops
 during the late War. —

2 Confinement in a Crowd. The plague
 in Egypt has been ascribed to the inhabi-
 -tants of the shores of the Nile crowding
 together during the overflowing of that
 river. Jails - hospitals - and even
 Schools often become the sources of
 this ^{fevers from} ~~disease~~ the confinement and
 concentration of ~~and~~ the discharges
 from the pores of the human body.
 & The discharges from the body are more

I have given of the sources of miasmata, or putrid
 miasmata, and of their effects upon the human
~~body~~, body, you will be surprised to hear
 that the existence of these miasmata has been
 called in question - may more, that Exp^t made
 with the Indianer ~~persons~~ ^{both} in America and
 America prove that they have no existence at all,
 and that the atmosphere supposed to contain them,
 is two degrees purer than the air of adjoining, and
 healthy mountains. To these exp^ts I shall only reply
 that the same mode of reasoning would prove the
 non existence of those matters ~~in~~ in the air which
 produce the small pox, measles, & an hundred odors
 w^h float in the atmosphere, none of which I believe
 ever discover themselves by means of any of the
 chemical test that ever has been invented. As well might
 we might we deny the existence of spirit, because it
 cannot be made obvious to our senses as the air is -
 because they are not to be discovered by the indrometer.
 = time of miasmata, the ~~best~~ best Indies, and the
 Game Guards of the United States ~~are~~ have furnished
 within the last ~~12~~ ¹² years - many - many thousand
 proofs of their existence. To deny them is to renounce ^{our} reason
 all observation, & even the evidence of our senses. go to p 84. ©

